

NECKER III APRIL 1979

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EASY RIDER

8

COGARD LOGSIA FRENCH VINDICATE SHOALS MAY 1979
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[EXC BY OCT 29 1993]



ER NECKER III AND FRENCH FRIGATE SHOALS
24 APRIL - 12 MAY 1979

NARRATIVE Pages 4-36; 36-
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 MAP OF NECKER pages 14-15

NAFTEL SIGHTING REPORT (NECKER BANK) pages 18-19
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Juvenile Recoveries and Taggings Pages 7, 22; 30, 35
 MONK SEAL TAG RECOVERIES Page 100
 TURTLE TAG RECOVERIES (including Feb 79 with flow) page 90
 DEPTH METER ATTACHMENTS Pages 41(A); 46(B); 47(C);
 59(D);



COMPOSITION BOOK

9 3/4 IN. x 7 1/2 IN. (24.8 cm x 19 cm)

- AVAILABLE AS:
- No. 09-9130 (1130) 60 SHEETS COLLEGE RULED & MARGIN
 - No. 09-9132 (1130-P) 60 SHEETS COLLEGE RULED & MARGIN
 - No. 09-9134 (1143-X) 100 SHEETS COLLEGE RULED & MARGIN
 - No. 09-9132 (1130-P) NUMBERED PAGES

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VERNON McMILLAN, Inc., ELIZABETH, N.J. 07208

SCUBA PRO DEPTH GAUGE INSTRUCTION BOOKLET page 19

Necker: 26-30 April 1979
 FFS: 2-7 May 1979

SUMMARIES

NECKER = 26-30 APRIL 1979

Adult taggings	-	4♀; 3♂	⑦
Adult recoveries	-	1♀	①
Juvenile taggings	-	-	
Juvenile recoveries	-	2	②

FRENCH FRIGATE SHOALS = 2-7 MAY 1979

	TRIG	W-S	EAST	GIN	11♀ 39♂
not cumulative - Adult taggings	- 3♀ 8♂	5♀ 13♂	2♀ 11♂	1♀ 7♂	⑤⑩
- Adult recoveries	- 6♀ 7♂	1I	3♀ 10♂	-	⑩⑩
- Juvenile taggings	- TRIG - 3; W-S - 4; EAST - 1 =				⑧
- Juvenile recoveries	- EAST - 3				③

April 1979 NECKER/FFS need list:

1. scoop net
2. Butane stove/cup/pot or tin cup
3. Radios - ^{CB} extra charger _{batteries} 2 for \$5.88 Longs
4. Flag
5. Emory book
6. C- Rations/other food ✓
7. tagging/measuring gear/Preservative
8. Pop tent/canvas tarps/air mattress
9. Avon - outboard motor
10. Boots - socks / canvas gloves
11. Tabbies - Nakano Fishing
12. Water sample
13. Depth gauges / tiewraps / electric drill
14. Am Radio
15. FFS ¹⁹⁷⁸ books
16. Stove / Flares
17. HAT
18. ^{small} Spiral field notebook
19. Extra Tarp

24 April
1979
TUESDAY

8 AM Departure from Kewalo Basin
aboard R/V EASY RIDER - TO Honolulu
Harbor for Lobster traps -
depart ~ 9 AM

Calm seas - light kona weather for
the past 5 days -

Crew aboard - Jerry, Ron, Laura,
Alan, Bert (NHFS observer).

OBJECTIVES of EXPEDITION:

1. Recapture juvenile turtles
that were tagged during
Necker I & ^{NOV 77} II (17+ months ago) -
RECORD Growth; Tag more juveniles
2. Tag, Recapture, census basking turtles.
3. Collect food samples from stomachs.
4. Make algae collections in Shark Bay
5. Do Turtles MIGRATING FROM MAJORS TO FFS
USE NECKER AS A REST STOP -?
GOING TO FFS? RETURNING FROM FFS?
6. Do ANY OF NECKER TURTLES (♂ & ♀)
SHOW EVIDENCE OF COPULATION WOUNDS?

24 APR
7

25 APR
79
WEDNES

26 APR
79
Thursda

- 24 April Sweidloff and Pufferberger, on 3-jacks in Midway,
 79 Reported over radio from albacore boat
 North of Midway - 170°E , 35°N
 ~ 15-20 looking for fish, haven't
 found them yet. Have seen "brown water" streaks
 small shrimp or krill, also birds schools
 Also seen by boats last year.
 also pelagic red crab seen on surface, to 43°N
 by Naftel. "rows"
- 25 April Lots of sleep - choppy seas in
 79 morning, calmer in afternoon.
 WEDNESDAY 31°N 64.5°F water of Midway

- 26 April Anchor off South side of Necker at ~ 5 AM
 79 Ate breakfast 9-10 AM - assembled
 Thursday gear - inflated Avon borrowed from Zoology -
 Skip motored plan and came to
 NW landing - then shuttled gear.
 At 11 AM, 7 basking turtles were
 clustered on ledge - bright sun - low
 tide. a subadult (small - 2 yearling?)
 was present in water by NW landing.
 Ron was put ashore and helped
 transfer gear to campsite above
 ledge. Walked to top of Annexation

26 April
79
Thursday

Hill with Ron and Alan, ^{departed 12:55 PM} Flagpole still present. Noted pair of brown shippers in area of bluff shelter, campsite where gear was stored November 1977. Upon return from Ames Hill, only three adult baskers were left - 2 ♂, 1 ♀ - 13 seals on ledge - of these, 4 appear to be SA's (1 small). Boulder Beach has 8 adult seals hauled out - one is very thin.

At 2:45 PM, I tagged the two remaining adult baskers on ledge -

2996 FL male

2997 L^{ck}F male - 3003 RFL coded 4/27/79

^{Damaged -}
broken down Right side canopy

^{DID NOT}
RETURN FOR SECOND TAG.

CB radios are not making contact - they can hear me, but their signal to me is very garbled - tried all channels A, B and C. I have smaller unit.

While Ron and Alan were still on island, a P-3 (C?) went over ~ 5000' heading to the west.

At 3:15 PM a large single rotor, gray with star (Air Force?) helicopter went over heading to the East - also up higher and trailing was a 4 engine plane. Seabirds

26 APR
79

NOTE



OK

OCT 27 1993

Photo Roll 2



OCT 27
OK

Tag Recovery

~~Necker II~~

17 ~~maus~~ redoys

26 April responded to helicopters - flocks rose up.
 Noted some rock drillings in W cliff face - near Tarages camp -
 During early afternoon I noted two seals (♂ and ♀) continually rubbing each other (courtship) in deep water cut by basking ledge. Noted what may have been copulation position on several occasions.

NOTE: At 4:30 PM, Ledge is approximately 3/4 shaded.
 Noted Cauerpa growing in pool -
 → Sunset ~ 7 PM

At 7:30 PM noted SA feeding -

At 7:45 PM noted 1 SA and 2 juv.
 Tide receded some since high ~ 6 PM -
 Seems that reduced slope permits turtles to come inside and feed -

OCT 22 1998
 OKK

→ Captured ones, as follows:
 (with long-handled scoop net)

Tag Recovery

Necker II

IF 12 days

2414 ^{Pink} F coralline Grazes on Carapace

2415 F " "

11/14/77 - S 16 3/4" x 14 1/2"

S - 16 3/4" = 42.5

14" = 35.4

26 1/2 lbs
 (not corrected)

C - 17 1/2" = 44.5

16 1/2" = 41.9

- 2 scale

C 17 5/8" = 44.9

16 7/8" = 42.2

28 1/2 lbs

PL - 14" = 35.6

14" = 35.4

wt - 23 lbs

TAIL - 3 3/8" = 8.6

TAIL - 3 3/8" = 8.6

HEAD - 2 5/8" = 6.4

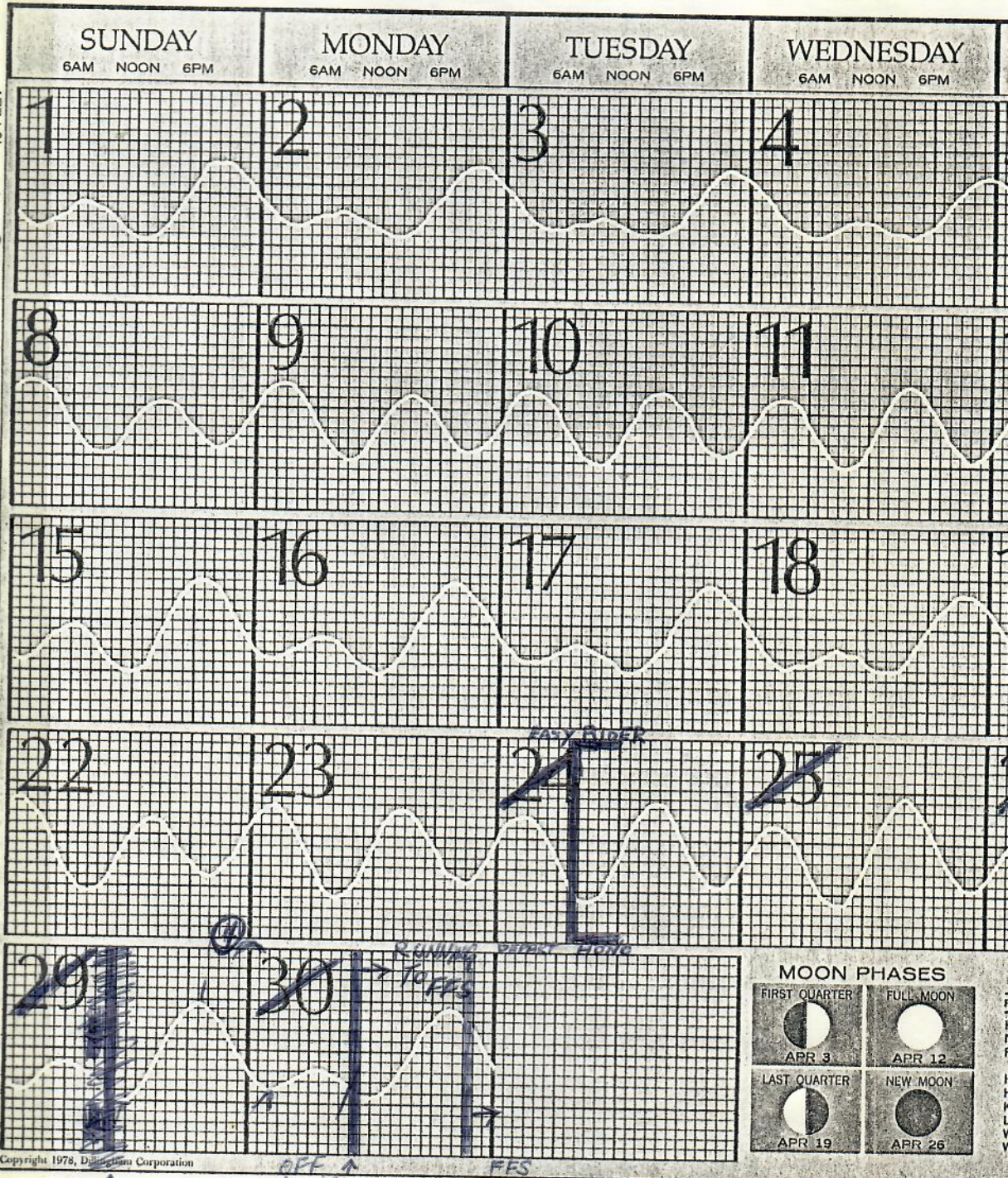
HEAD - 2 5/8" = 6.4

21

Th

[OC

APRIL 1979 TIDE C



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MOON PHASES

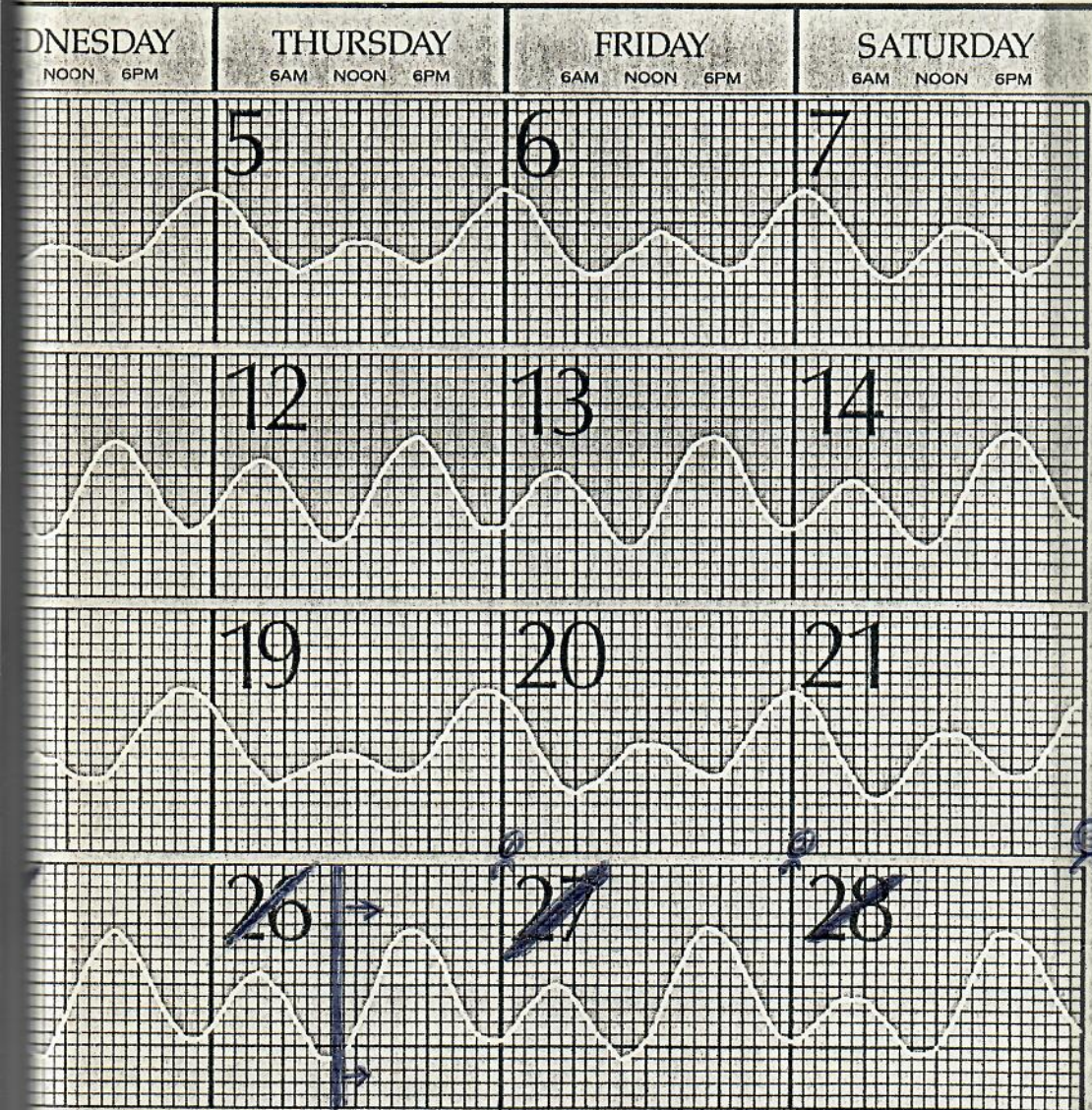
FIRST QUARTER APR 3	FULL MOON APR 12
LAST QUARTER APR 19	NEW MOON APR 26

↑ course

OFF ↑ NECK?

FES

TIDE CHART



MOON PHASES

For tide time at following places, add or subtract from Honolulu time.

PORTS	Hrs.	Mins.	PORTS	Hrs.	Mins.
HANAIEI BAY, KAUAI	-1	40	KAUNAKAKAI, MOLOKAI	-0	09
NAWILIWILI BAY, KAUAI	-0	32	KAHULUI, MAUI	-1	48
PORT ALLEN, KAUAI	-0	32	KIHEI, MAALAEA BAY, MAUI	-0	14
HALEIWA, OAHU	-1	36	HILO, HAWAII	-0	59
HANAUMA BAY, OAHU	-0	55	HONUAPO, HAWAII	-0	24
KANEOHE BAY, OAHU	-1	35	MAHUKONA, HAWAII	-0	24
LAIE, OAHU	-1	48	KEALAKEKUA BAY, HAWAII	-0	16
WAIANAE, OAHU	+0	16			
WAIMANALO, OAHU	-1	15			

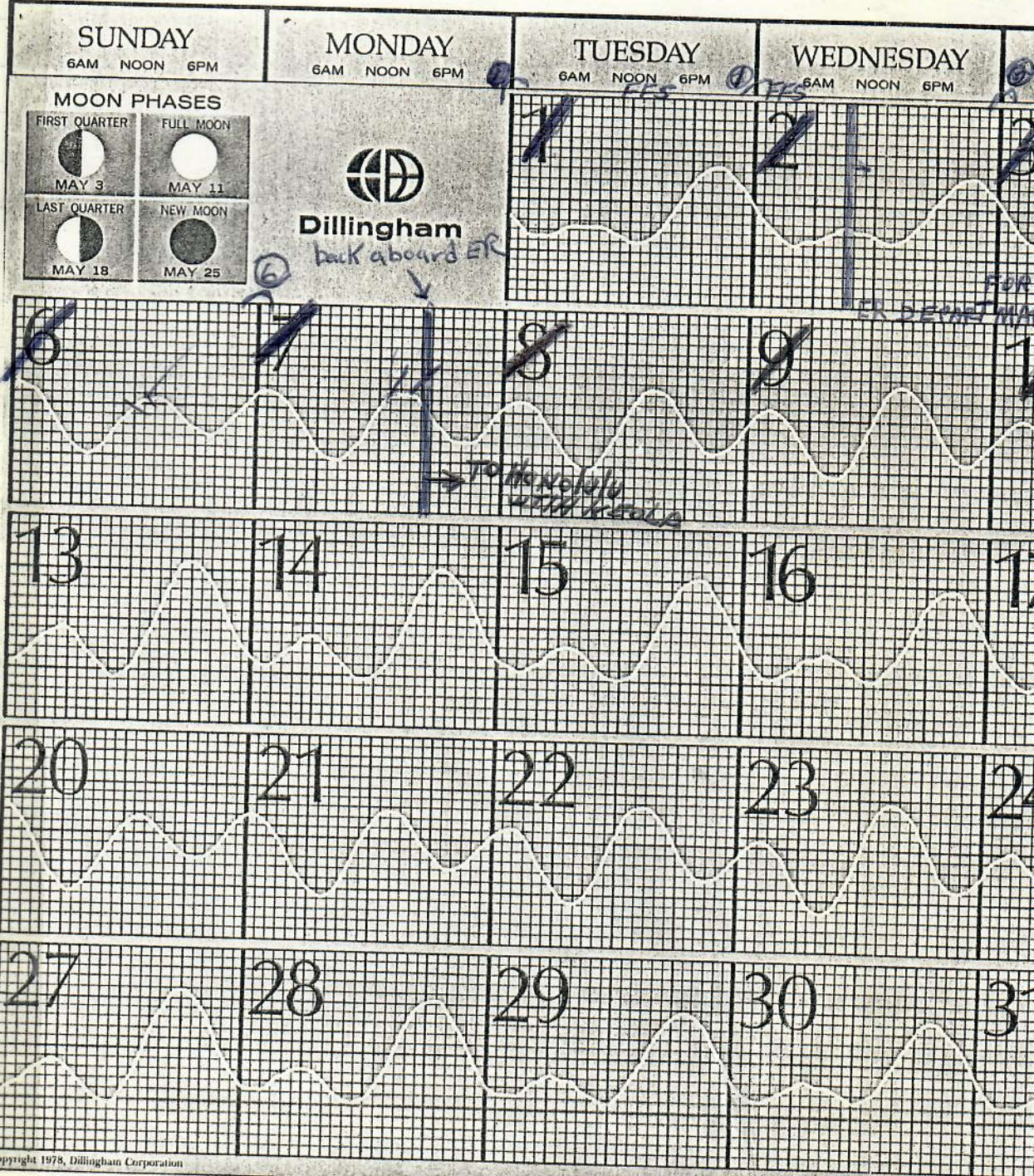


Dillingham

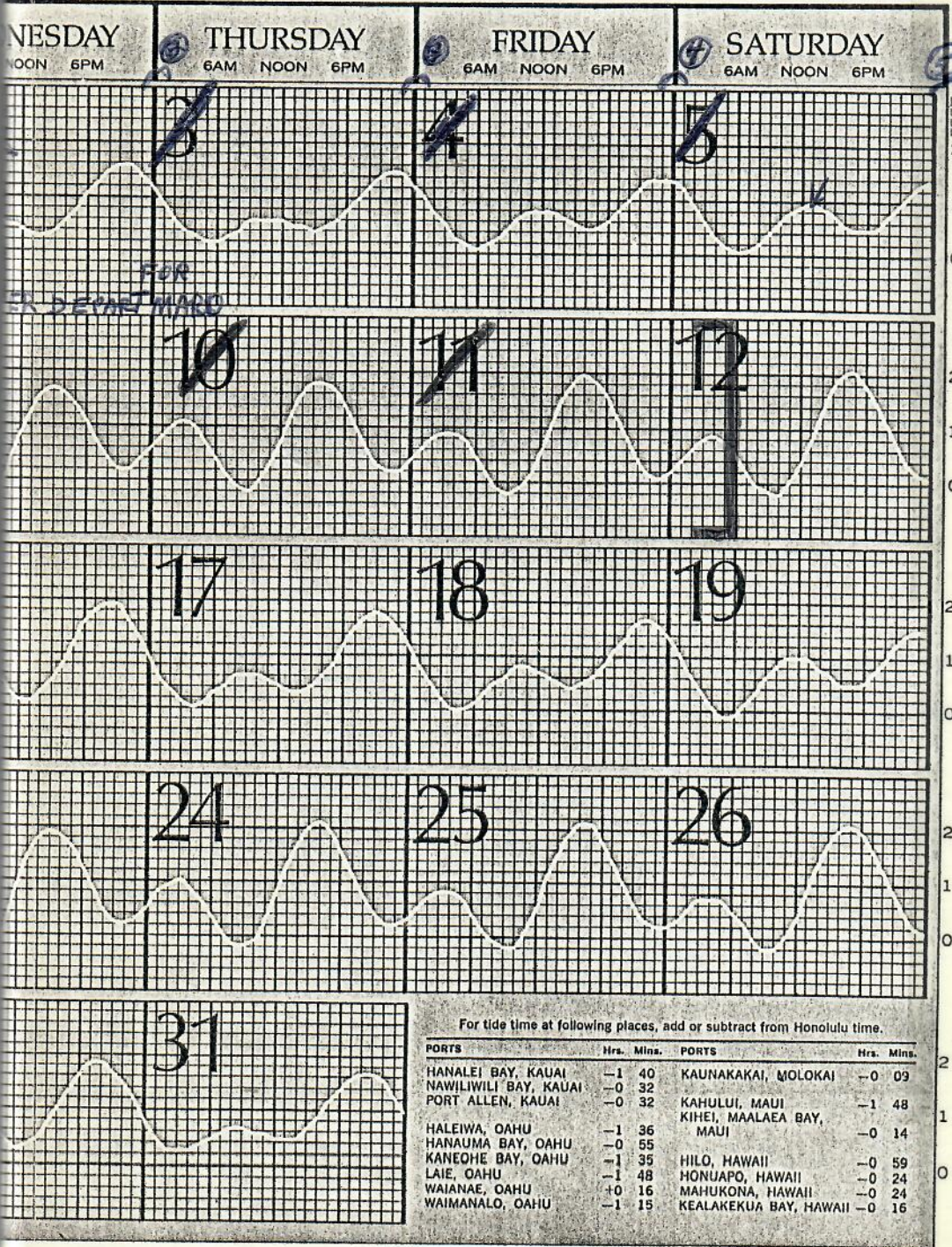
FULL MOON
APR 12

NEW MOON
APR 26

MAY 1979 TIDE CHART



TIDE CHART



26 April 9:30 PM - no baskers

79 10:30 PM - 1 basker

Thursday 1 AM 27 April - 5 baskers

27 April 2 AM " " - 1 basker

FRIDAY 6:30 AM " " 2 baskers ♀

low tide 9 AM 3 ♀ baskers

1 ♂ in shallow water by boulder beach

27 April

7

FRIDAY

27 April 79 Sunrise ~ 6:30 AM

FRIDAY Several (3) seals arrived at ledge at sunrise (5 total)

Barks and growls heard several times during the night.
 Crabs ^{GRAZING?} crawling on seals and turtles -
 Tight groups of them on rocks -

→ 9:30 AM 3 ♀ 20 ♂ baskers

10:30 AM 4 ♀ 20 ♂

11:15 AM 4 ♀ 10 ♂

[OCT 23 1993]

11:30 AM Basker Toggings: 2998 ♀

2999 & 3002 ♀

3000 ♀

3003 ♂ added to 2997

2996

of the one ♀ hauled out did not return 15 minutes after tossing

Seal

27 April	12:30 PM	2997	1 ♂	1 ♀	just tagged
79	12:45 PM	299707	returned to water	- splashy	Being
FRIDAY	12:55 PM	♀ returned	- no turtles on ledge		

Tide-waves BUILDING

At low tide - ~ 11 AM, walked out on rock/reef flat and collected algae. will press set and preserve set. Samples by "gap" will be collected separately.

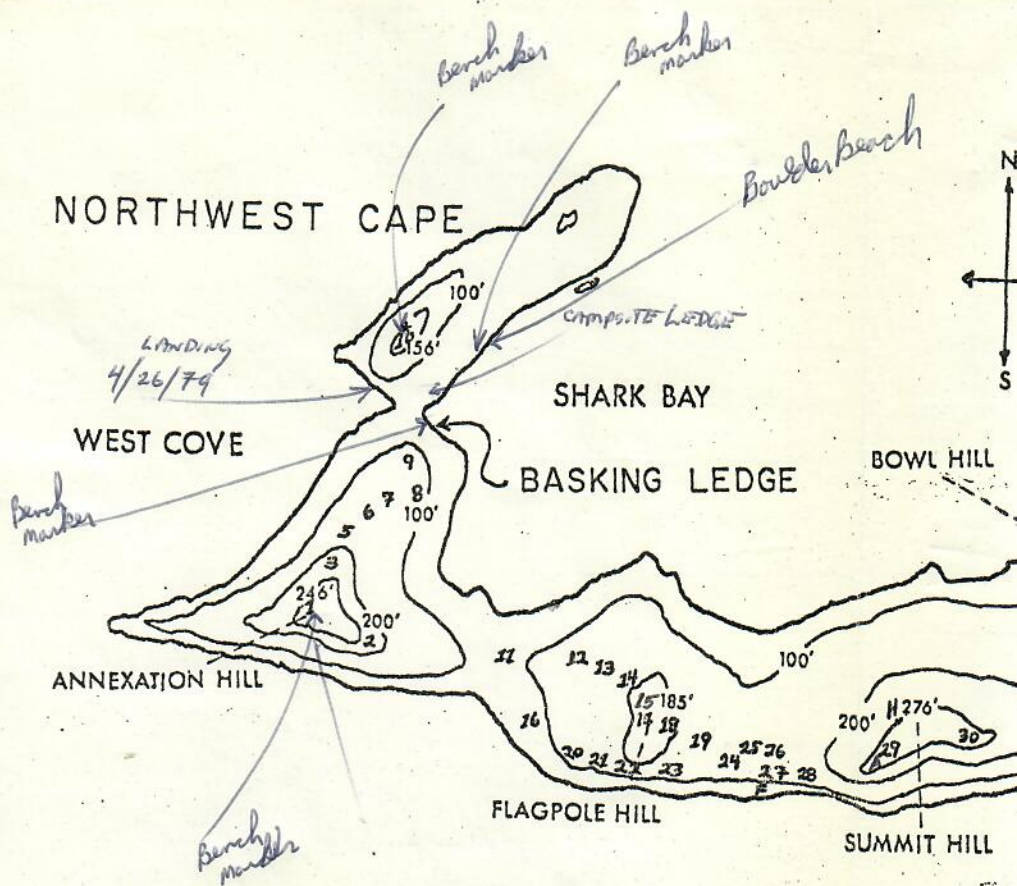
Note: Smell of seal feces and bird dropping prevalent.

Ate lunch at 12 noon - coffee, canned turkey, 4 crackers (all C-rations) and hot peppers. At 1:15 PM, noted high altitude jet ^{restab} - 4 engine - going to the west. 5 of Necker. Many Photos today - rolls (2) 3-4-5

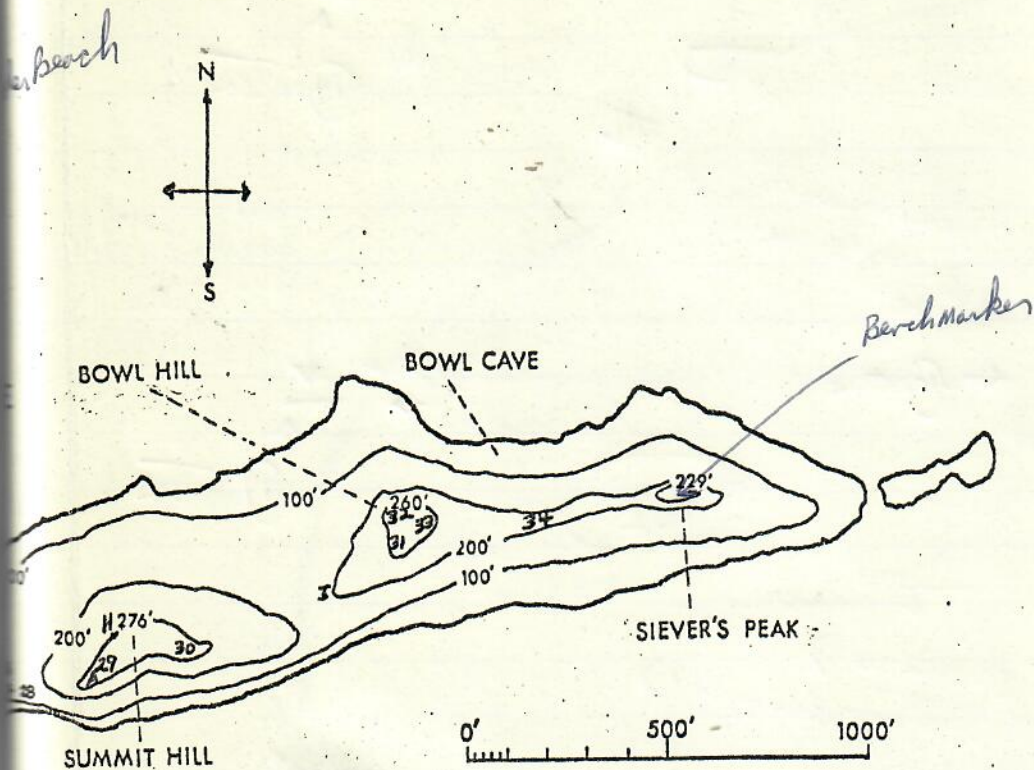
At 2 PM departed to explore NW cape - Earlier I noted ERider depart to west, this afternoon noted ~ 6 miles to NE where lobster gear was set last night.

Question: Where do adult turtles go when they leave the basking ledge?

Seal Note: no tags seen on seals - effort is being made to observe for such. [TOPAGE 21]

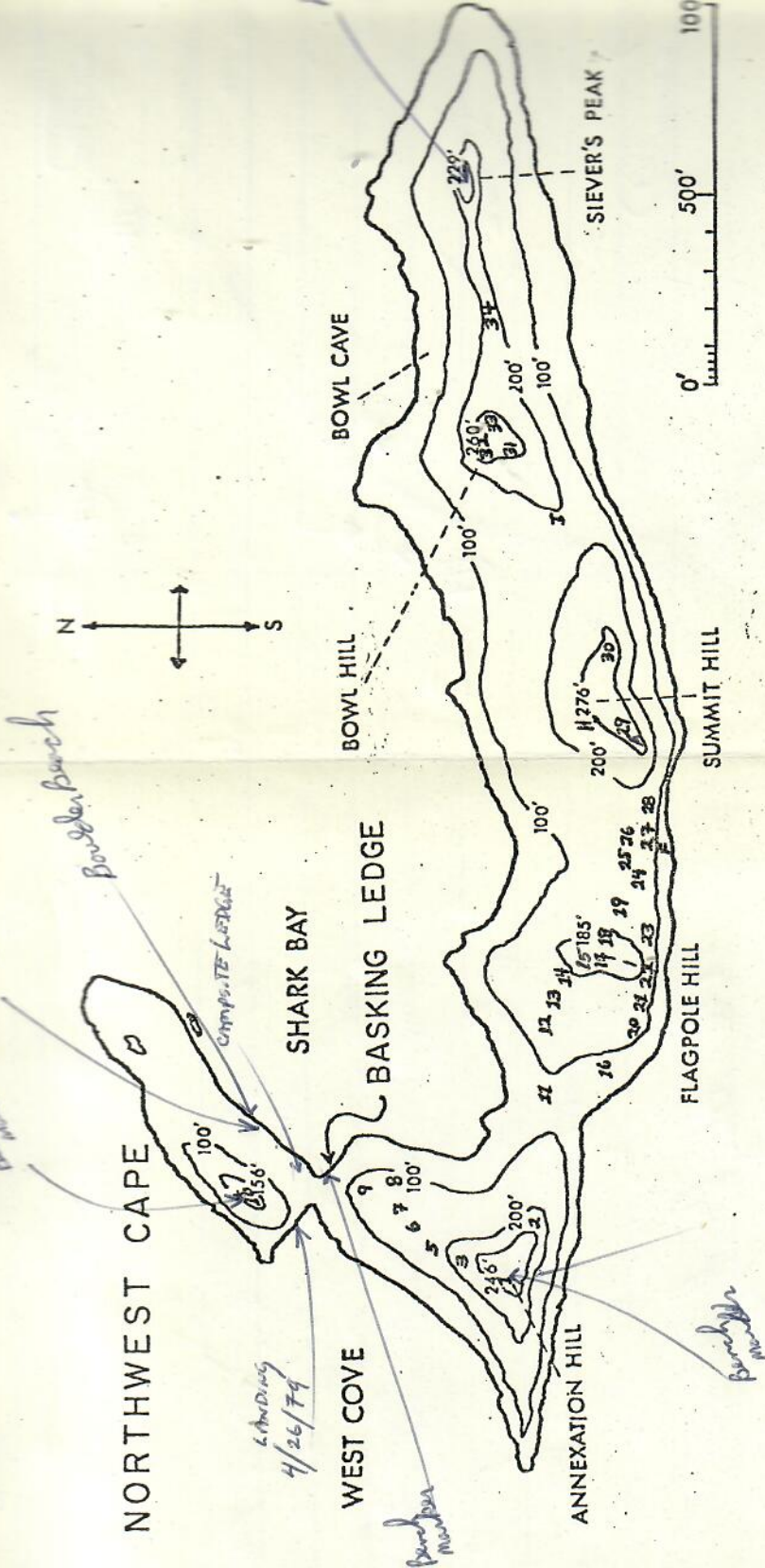


Necker Island ($23^{\circ}35'N$, $164^{\circ}42'$) and consists of sparsely vegeta and located 155 miles from Nihoa an Hawaiian green turtle breeding



($164^{\circ}35'N$, $164^{\circ}42'$) has an area of 41 acres
 sparsely vegetated volcanic rock. It is
 5 miles from Nihoa and 75 miles from the colonial
 turtle breeding site of French Frigate Shoals.

NOTE: NECKER NOT POSTED
 AS REFUGE
 PROBABLY NOT GARDNER
 PINNACLES EITHER.

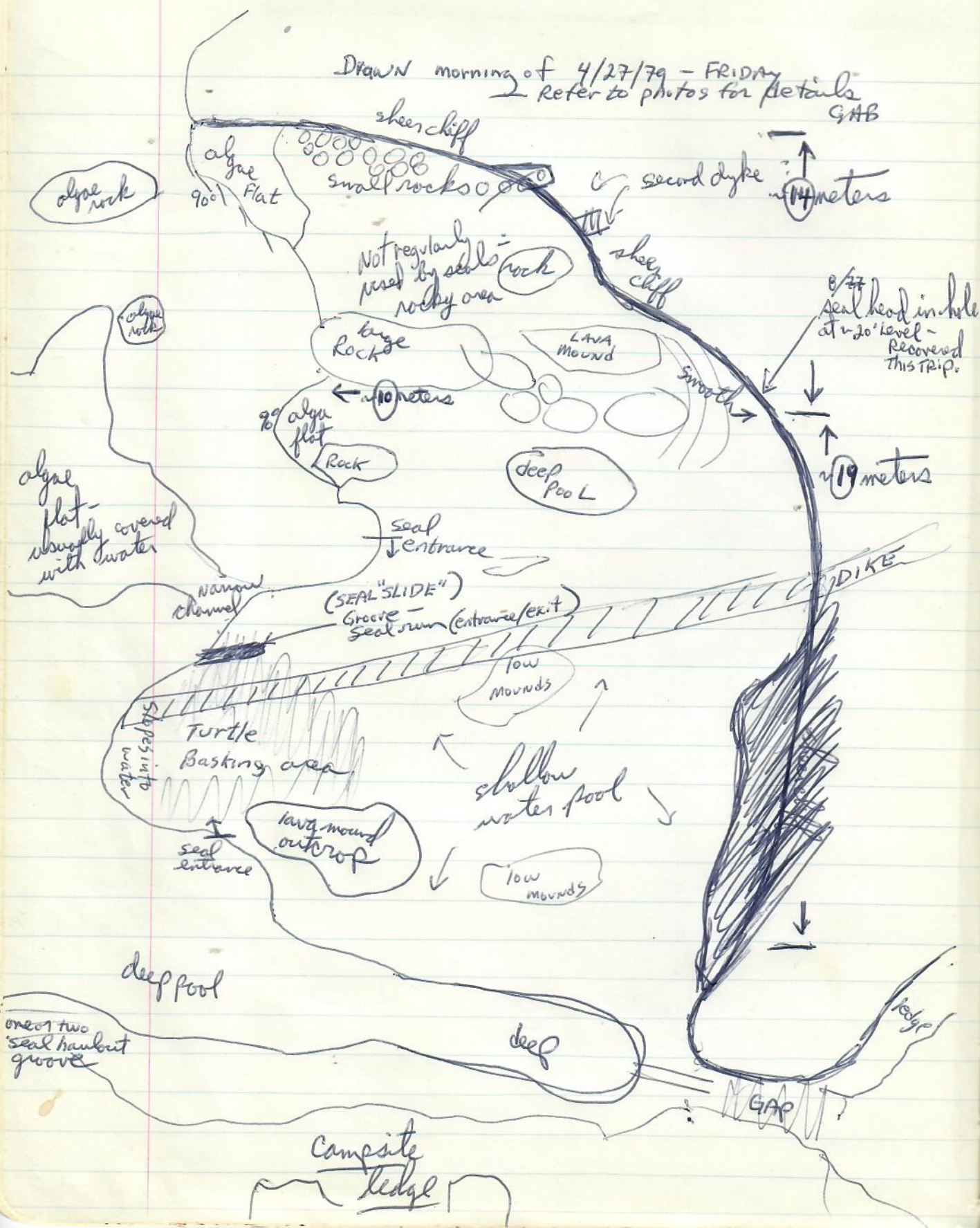


Necker Island (23°35'N, 164°42'W) has an area of 41 acres and consists of sparsely vegetated volcanic rock. It is located 155 miles from Nihoa and 75 miles from the colonial Hawaiian green turtle breeding site of French Frigate Shoals.

NOTE: NECKER NOT AS REFUGE PROBABLY NOT GUARANTEES EITHER

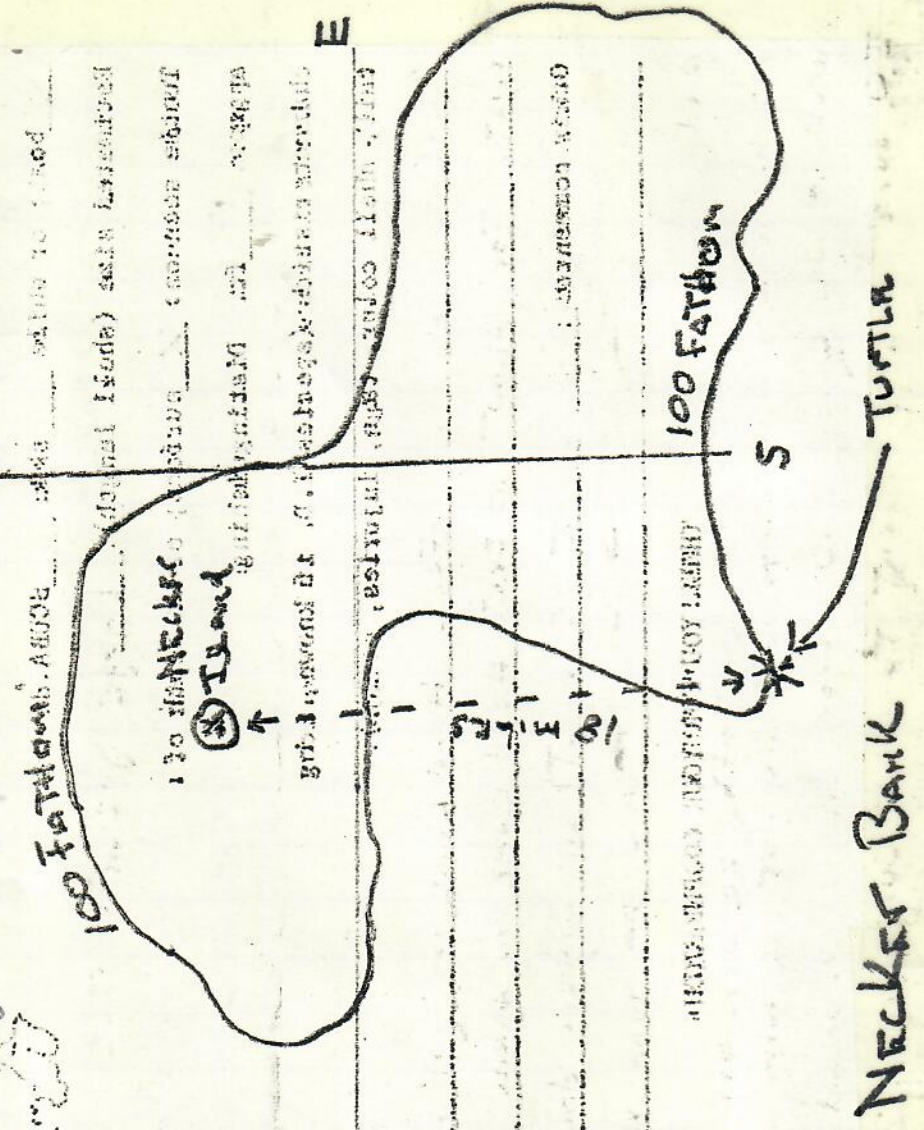
16 NECKER LEDGE

Drawn morning of 4/27/79 - FRIDAY
Refer to photos for details
GAB



Note - Of small juvenile turtles occurs on banks and reef of N.H.I. and if they are
 survivors and can feed at 10-20 fathoms, eventually they should get caught
 in the commercial or, research traps being set. Sound logic for high types if
 they are set in similar depths. Perhaps such traps should be set
 with the idea of inter-traply capturing these animals - N bait with squid.
 However, note that lobster bait is usually rotten.

5/11/54



SEA TURTLE SIGHTING REPORT

(Please return to: George H. Balazs;
 Hawaii Institute of Marine Biology;
 P. O. Box 1346; Kaneohe, HI 96744;
 Tel. 247-6631)

Observation made by: EASY RIDER

SEA TURTLE SIGHTING REPORT

(Please return to: George H. Balazs;
Hawaii Institute of Marine Biology;
P. O. Box 1346; Kaneohe, HI 96744;
Tel. 247-6631)

Observation made by: Easy Rider

Address & Tel. No. (optional): _____

Date: 3/13/79 Time: 1415 Location (indicate on chart): N 23° 17.20' / W 164° 37' 30" "NECKER BANK" 18 miles South of Is.

Observation made from: _____ shore;

X boat; or while _____ skin _____ SCUBA diving.

Estimated size (shell length): "LARGE" GREEN TURTLE

Turtle seen on: X surface; or at depth of approx. _____ ft. Distinguishing

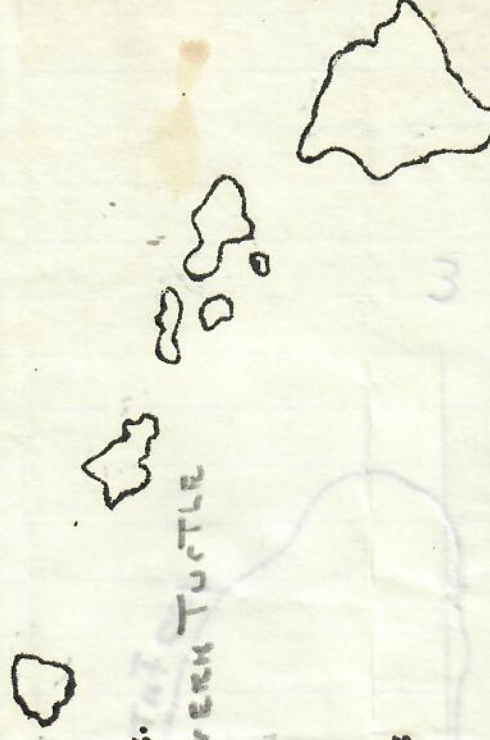
characteristics (species I.D. if known, long tail, shell color, tags, injuries, etc.):

TURTLE WAS ON SURFACE. HEAD CAME UP, GOT AIR MOVED UNDER WATER FOR ABOUT 10 FEET HEAD CAME UP AGAIN. STAYED ON SURFACE

Other comments: FOR ABOUT 15 SEC. THEN WHEN DOWN, TURTLE WAS MOVING TO THE WEST THE WATER DEPTH WAS ABOUT 50 FATHOMS

AND CLEAR TURTLE WAS JUST OFF THE DROP OFF OF THE BANK. WATCHED FOR ABOUT 10 MIN FOR HIM BUT DID NOT SEE HIM AGAIN. SKILL WAS DARK. WEATHER WAS CLEAR. SWELL FROM NW 8-10. WINDS NE 10. SEA, NE 3-5 FT.

I.O. SURE AND MOMENT TO WEST. SURE "ADULT TURTLE" "OUR"



27 April 79 * Titles of articles on Necker:

Friday - Smithsonian? - Natural History? - ALOHA? magazines

NW Cape

Noted many blennies in tide pools -
Got lots of chigger (insect of some sort) bites last night.
→ Should buy lot for use on Necker - other islands!

→ Noted seal penis out on male hauled
out on ledge; large around - reddish
Popular, style Necker article -

first person

Points to make:

Noted nice shelter overhang - $\frac{3}{4}$ in NW Cape
Seems protected against N-NE-E rain

Noted piece of sponge - brought by birds?

Also piece of Sargassum (brought by seabird)

Thought - Sue FWS - Griegentanner over
Tern Island - with aid of EDFund.

* - Ramifications of Tern Fishing Station -
IMPACTS Necker > FG catch stats
Gardner Pinnacle

→ HIRTH BIBLIO

List References for R. Shallenberger:

Direct observation is the best form of telemetry.

3:45 PM large turtle just outside reef -
floating around. Some gray rudderfish
nearby.

27 April 79
FRIDAY

Starting about 5:45 PM, noted subadult ~~1/2~~ size tail male feeding inside reef. Note this may be the one I caught with net, with great difficulty ~~last~~ (first) visit.

~5:55 Small juvenile, clean shell, seen to surface once - then no more.

Made continuous observations from ~6:15 PM on - Noted the male SA.

Then also a female SA; then later another female SA (3 total).

About 7:30 PM noted a juvenile. Do the SAs keep the juveniles away?

At ~8:10 PM (dark) I captured one of the juveniles, using a flashlight.

Too big for net - caught one, but let it out.



TAG Recovery
8/24/77
NECKER I
20 mons
3 days

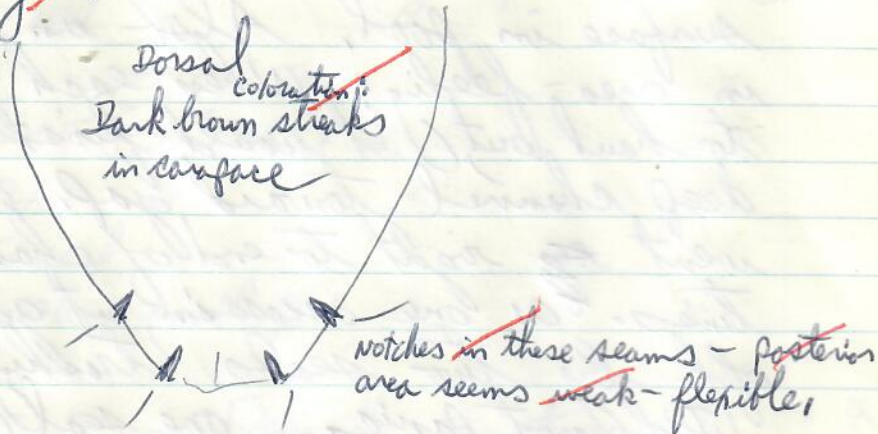
2391 GB 414 wt. 42.5
2389 RFL N.C.
2390 LFL squashed w/ pliers 44.5 lbs
S - 19 = 48.3 x 15 1/8 = 38.4
S - 20 1/8 = 51.1 x 16 = 40.6
C - 20 1/2 = 52.1 x 18 1/4 = 46.4
C - 21 1/2 = 54.6 x 19 1/4 = 48.9
PL - 14 5/8 = 37.1
PL - 15 1/2 = 39.3
TAIL - 4 3/4 = 12.0
HEAD - 3 1/8 = 7.6
TAIL - 3 7/8 = 9.8
HEAD - 3 = 7.6

Nothing from stomach

27 April 79
FRIDAY

29 OCT 2002

27 April * (2391 Recovery continued)
 79 Two small leeches and small egg cases
 Friday collected in ventral areas of distal leg etc.
 Preserved in vial with skin algae
 scrapings.



2391^{RF} distal - noted that bent over looking point
 has some wear. This point is ventral
 and therefore may scuff along bottom on
 rocks, sand, etc.

* Ozobranchus branchiatus (Menzies, 1791)

as per Murray Dailey 6/19/79
 SCOSC
 Box 570
 Long Beach, Calif. 90801

4/28/79
SATURDAY

During the night, the air mattress went flat -
mole bug bites - it's good thing I have some
calamine lotion.

Between 7:30 - 8:30 noted a juvenile occasionally
surface in pool. Also an adult turtle
in area - feeding? When each turtle arrived
to haul out, it would first in area of
deep channel toward gap. One turtle
went ~~to~~ right to end of channel several
times. On one occasion, it got blocked
off by two seals 'trashing' around.

Did not panic. One seal (probably a
male) showed considerable interest in
adult female swimming in pool. Pushed it
around for ~10 minutes, almost as if
holding on for a ride. Possibly
trying to mount it. Again, turtle
did not panic, but tried to swim
slowly away.

9:30 AM Basking turtle observations - bright
sun on ledge from east. 50-60 gaps CRABS
on ledge, but only one on turtle -
appears to be grazing on algae. - When
waves come close, some crabs retreat
to the dry area on top of turtles. photos

OCT 2

28 APR

SATURDAY

①

②

③

④

⑤ [rec

⑥

*

* Make formalin seawater in film canisters
ahead of time

* Smithsonian - natural history - Query letters? 29 OCT 2002
for article

28 April

79

11:30 AM baskets toggings (two baskets starting to

SATURDAY

more around abit probably getting too hot) -

also waves ^{seem to be} just start coming up.

- ① 3007 ~~OT~~
- ② 3000 - 3009 - left eye TMR
- ③ 2998 - 3005 (eye TMRs) ♀
- ④ 2999 - 3002 ♀

⑤ [recovery 2394 ^{off} not checked
on 3004 - 3006 small ♀

⑥ + [2997 ¹⁹⁹⁶ OT] + [Apparently one got away] = 7

Noted baskets facing water (following toggings)
using flippers in attempt to throw
shallow water over back.

* Calculate quantity of fecal matter going in water
from seals (not turtles ~~birds~~)

26

Rock reef area - Caveira - at base of low
saddle/gap between Annex. & Flagpole Hills - Seem suitable
for juvenile feeding, at least under some weather conditions.

28 April 79
SATURDAY

What is now rock reef with algal
growth may have been dry ledge at
one time - water has eroded away ledge.

Noted two channel exits/entrances
between inter-pool and outside barrier
rock/wave line.

Also noted seal "run" ~ 10' south of
dyke in ledge.

Noted attempted copulation between ♂ on ♀
after morning tagging/retreat of baskers.

- Note: No seals have ever been seen
in molt at Necker - Do not recall any.

Where do young SA's come from? FFS?

* → Should send ^{my} photos of plants to D. Herbst
for ID

2:15 PM Set out to explore Annexation and
Flagpole Hills - photo #19 roll 6 of
Marge just below top of Annex.

Smooth stone still by side upright.
Photo #20 - Back side of Marge at top of
Annex. Flag pole in photo on ground.

Remove flagpole to safe area to prevent
removal, vandalism, and throwing in ocean.

28 APR
SATURDAY

See LRB (noted 5/13/79)

28 April 79 Photo #21 Marae with old photo of 1894 men sitting

SATURDAY

on.

#23 & 24 Marae 18 and adjacent pile of rocks with metal refuge sign.

#25 backside of Marae #19 (just to east of no. 18)
(3 uprights only)

Had can of oranges at Marae 12 - cold breeze blowing; noted Fuzzy Poles heading toward island from the NE. Started back, found dark green bottle, top broken off. Picked bunch of Ghai bush - with seed pods - most have green pods. Arrived at gap ~ 5:15 PM - ER threw me bag of: vegetable juice (2); ice; diet Pepsi; lobster tail; apple and oranges; (ice cream sandwich not eaten.

~ 6 PM collected algae along rocks on west side of gap - also on inside of gap - rock pools leading to deep cut.

~~Have~~ adults present at Necker resided here since juvenile life-stage?

28 April 79 At 6:55 PM ^{first} noted juveniles out.
 SATURDAY - 1 SA feeding inside reef -
 very rough water from high tide.

Why do the turtles come to feed at
 this time?

Also saw an adult, presumably feeding
 inside. Have seen others on other days.

crustacean
 peanut
 butter

— Possibility - that faster growing turtles
 move out to other areas/locations,
 therefore I don't catch them during
 return to sites such as Necker.

Only catch slower growing ones that
 I stay. This question would be
 solved by making a long distance
 recovery of a juvenile - i.e. Hilo Bay
 recovery by Almarza ^{ROLAND}.

29 April 79 Paddled canvas as much as possible with
 SUNDAY clothes, but hardly kept "falling asleep" from
 hard lava - will try to patch air mattress
 today.

8:15 AM - two turtles on basking ledge,
 one adult in pool swimming around
 slowly. Seal was playing with it earlier.
 Note: Seals at Necker, and especially basking
 turtles, frequently ignore presence of
 people close by. I have never had

Basking

29 April a turtle "flee" from ledge. Even when
 79 tagging & handling, response is a slow
 SUNDAY retreat - frequently no response at all.
 Apparently have not been conditioned to
 flee by presence of people.
 This would seem to be contrary to
 Sealife Park where turtles bask even
 though numerous people are present (except
 at night and early morning).

QUESTION: Turtles leave basking ledge at
 certain time because splashing washes
 bother them, or because this signifies
 high time, a cue to go feed? Turtles
 can crawl up very high on ledge when they want to.

~ 10:30-11:30 AM Took many photos of seal
 amongst basking turtles - rolls 16 & 8;
 used 55mm, 105mm

Seals at Necker are good proof that movement
 takes place between areas, i.e. limited
 pupping habitat - adults, SA present
 were not born here; this is also
 the case for Gardner Pinnacles and
 Nihoa (recall tagged seal recovery FFS → GP →
 FFS, by R. Coleman).

Basking Turtles respond with irritation when
~~the~~ crabs walk on front flippers;
 No response when on carapace. Some


 OCT 28 1993

29 April seal were also seen to respond.

79
SUNDAY

Proceeded to tag baskets ~ 12:20 PM -
All had tags (new) - as follows:
~~3000~~ 3009 ♀; 2996 ♂; 2998 ♀; 2997 ♂ + new tag unknown,
when back into water before read.

NOTE: - that fish picked algae, particularly
mat, rug type, is seen to have lots
of crustaceans inside.

At ~ 12:30 I proceeded to snorkel survey
inside reef area. Used hood, mask and
blue fins. Entered water by seal on
N. side of "keyhole" channel. Observed
turtle sleeping on the bottom. Noted left
front flipper, head and hind flippers are
"holding" turtle in place. Smooth boulders
are on the bottom. I touched right
flap to see if she was tagged - no
tag, but turtle responded immediately by
opening eyes - moving head and looking
at me. Immediately started to move
slowly, to depart. I grabbed a hold of
carapace gently and relaps. Turtle swam
slowly along departing out channel.
No fight response noted. Arrived at white
foamy water, where she hesitated
momentarily, before turning slightly to

NOTE - "HUM" when wind
blow - apparently created by rocks

29 APR
SUNDAY

Schools of A. holole and one large M. sea.
Snorkle survey revealed large quantities of algae Caverta -
"small beak" type is dominant - turtles may not be using this
as much as previous, though, or it would probably be grazed
back more - or use of it.

29 April
79
SUNDAY

schools of A Hole Hole and one large. Not seen.
 Snorkle survey revealed large quantities of algae Cavertia -
 "small beird type is dominant - turtles may not be using this
 as much as previous, though, or it would probably be grazed
 back were - or would it this be evident?"

the left and continuing. Lost her in foam
 Noted that from Keyhole channel there is
 a deep broad pool (~15' deep) with
 no underledge outlet, as previously suspected.
 This is in front of, and slightly south
 of basking ledge. A bit further, there is
 a pocket on the bottom with glass ball net
 resting on bottom. Put two smooth rock
 on bottom at this site. Proceeded to
 survey area where I had seen turtles
 feeding. Collected algae from underside
 of rocks and all areas I could see
 or feel. Found some blades of a red
 filamentous. Noted that channel
 outlet has tremendous water force -
 sucking action. Saw an adult turtle,
 but she moved off - would not stay
 near me. Swam up on "ramp" - very
 smooth - no jagged pieces; at least the
 first segment. Heared on, and inspected
 3009 ♀ (like seal would) - no response.

After getting out ~ 1:15 PM, I got in sun
 for awhile. Salt water soothed bug
 bites.

About 2 PM Easy Rider came by. Almost
 didn't hear horn - but saw birds
 over west end of island rise up. Will be
 picked up tomorrow at 10 PM for departure
 to FF5.

29 APRIL

79

SUNDAY

About 4 PM noted small juvenile inside reef feeding. Shortly thereafter, saw Common Noddy Tern feeding on mollusks on rocks [sampled several for ID]; also later in afternoon noted Common Noddy picking at Capus molt-but do not know if this was the same bird.

At ~ 5:00 PM, explored west cliff face where Tanager Expedition had to move their campsite upward. Noted (again) mollusks up quite high - dry and hot lava rock. This may be an interesting thermo-regulation question for Whitton. Sampled two for ID.

Noted seal literally "slide" down exit on ^{basking} ledge.

At 5:30 PM I tried to photograph one of Bulwer's petrel pair in hollow. Tenacity for mate noted - do not know if mate has egg. Also took photo of cluster of Opahi on NW Cape face (from Tanager campsite). Wind funnels strongly through NW Gap. ("Cut" as per Tanager Expedition)

5:45 PM observed adult turtle surface just outside reef (Shark Bay).

5:55 PM Saw juvenile surface inside

6:10 PM Juvenile seen floating at surface

29 APR

SUNDAY

29 April outside waves.

79
SUNDAY

Basking ledge - inshore waters of reef (pools) might be considered a miniecosystem (microcosm?).

Consider seals/turtles exploring out new areas. Actually, each individual may have to do this to arrive at Necker, or Jare Necker, Nihoa etc., turtles ^{in a sense} "lost" animals. Broken off pieces of algae - small - washed out of Shark Bay could act as attractant/cue.

No ^{like tonight} moon - seals more likely to be out feeding? - more lobster out/get caught in trap, sds per Naftel.

6:25 PM Saw SA near entrance of NE channel into pools.

6:50 PM Saw turtle sticking head to pass through gap; - seal "slide" side toward basking ledge.

Thereafter saw SA and juvenile surface inside reef at regular intervals - presumably feeding. Watched for chance to scoop one (until ~ 8:15 PM (using headlamp like last night) - Did not come close - Does light scare them off - (doubt it).

Do turtles sleep inside reef at night, using baffled area of rock reef?

34

Bert KIMAWA - fishing forms of NHI
 NMFS observer
 previously with FWS

29 April

79 Where are adult baskers that I tagged
 SUNDAY during NECKER I & II? (except for one recovered
 * [Total No. =] not many tagged!

30 April

79 First light at 5:30 AM
 Monday Two adult females on basking ledge
 Subadult seen feeding at 6 AM (first
 observation).
 Noted that SA don't seem to bask
 (note before male).

Do turtles alternate between various
 feeding sites at Necker?

6:15 AM juvenile inside reef (out in center -
 presumably feeding).

Noted that basking ledge seems to get
 waves echoing off of large part of
 island in Shark Bay.

6:25 AM Sunrise

Note that some of basking turtles were
 seen to have raw areas on trailing
 edge of front flipper - one on side of neck.
 3000 & 3009 that I examined on basking
 ledge had raw spots on front flippers.

30 April

Monday

OCT 28

OCT 28 1993

30 April

79.

Necker Ecosystem - Shark Bay Ecosystem

Monday

6:35 AM Adult female appeared inside reef.

"The early bird gets a place on the basking ledge"

* Maximum sustainable on ledge =

Adult female hauled out - noted wash up by ~~wave~~ wave, hold with foremargin of front flippers, wash up by wave, hold.

OCT 28 1993

7:45 AM juvenile ²³⁸⁹ 2391^{RF} seen swimming close by basking ledge, but did not haul out.

7:55 AM Adult female hauled out to bask.

8:15 AM Small subadult arrived - also adult female seen inside.

8:30 AM adult female hauled out - 5 total

8:45 AM SA adult showed up inside

During morning hours I disassembled campsite and transferred gear to landing site at gap. At 9:15 I recorded tags on basking turtles. Shortly thereafter Easy Rider showed up for pickup. Calm water on this side. Trouble was experienced

30 April 79 with outboard motor for Avon.
 Monday - 30 minutes later they changed plugs
 (apparently wrong ones were in it) picked
 me up (fast gear - then me).

By 10:30 AM we were on the way to
 French Frigate Shoals.

* ON Friday evening April 27th, the Pursuit
 reported that they had snaggled a 3' turtle
 with their jig lines - brought it aboard,
 took photos, and let it go. They
 may have been in the area of the
 Milwaukee Sea Mount.

Need to contact them when they are in
 Honolulu. Other boats report seeing big
 turtles.

Came around south end of FFS - saw waves
 on reef - but not Disappearing Island.

Proceeded to point outside of Fa Perouse,
 then headed in to anchor up on the
 deep side of East Island (~ 9:30 PM).

Fried Chicken & Wine for dinner; soft
 bed felt good after lava rock at Necker.

1 MAY

79

TUESDAY

UP about 7:30 AM - had breakfast -
 Rain squalls coming through Shoals -
 wind will blow strong.

Saw orange tall buoy off our stern -
 retrieved it later - Japanese made in
 good condition.

1 May

TUESDAY

Shoulda
 why not

1 May 79 Worked our way over to Tern Island;
 Tuesday - made landing in Avon ^(11 AM) Ship departed
 to fish for Opakafaka, by Uua for
 Taylor.

Informed that Buoy Tender Butterwood will
 be coming with Whitlow due to "asbestos problem"
 T. Knight - Bryan Roberts here.

1 PM = Misty rain, blowing hard.

Report that in recent months two young
 seals (green) have died. One crawled all the
 way to center of runway. Both buried and
 marked with a cross.

Walked all the way around Tern - noted
 3 juvenile (LYP?) seals. Also vegetation
 has grown up at east end of runway, and
 along north side. Tern colonies have
 established here, but not in area west of
 Sears. Some birds are still on eggs,
 others have young in which wing feathers
 alone are just starting to come out.

Ann reports that two egg breakage has
 been required.

- ⊗ Talked to CG man who reports seeing 2-3 turtles
 in area where barge is tied up early
 morning and evening. "Drift" material collects at
 this site and they feed on it. Ann
 reported seeing turtles feeding on Man-o-war
 off north side of Tern.

On second circuit of island at ~ 5:30 PM,
 two juveniles were captured with scoop net

Should ask
 why not?

[OCT 28 1997]

1 May 79
TUESDAY

while feeding close to seawall on north shore. Also saw juvenile come in toward SE corner of island and swim slowly along south shore. Two attempts to net him failed - fight behavior exhibited. Captures are as follows:

GB 415
GB 416

TERN

across from LORAN antennae -

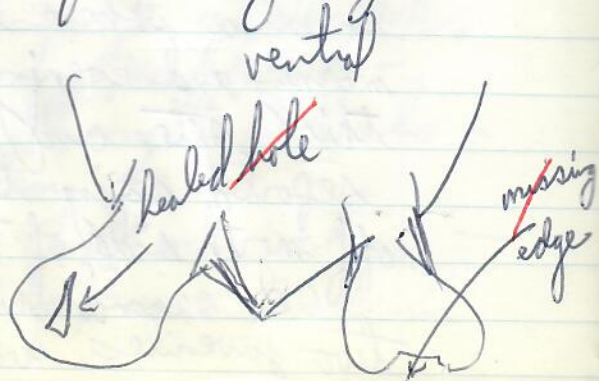
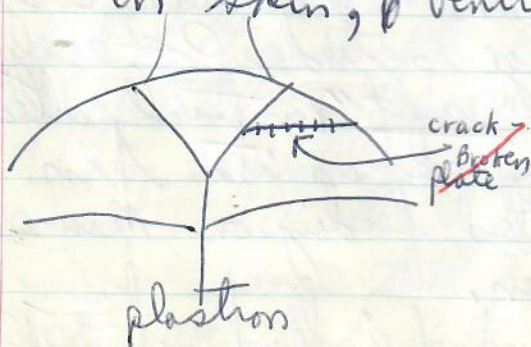
3010

S - $17\frac{7}{8}$ ^{45.4} x $14\frac{1}{2}$ ^{36.8}

3011

C - $18\frac{7}{8}$ ^{47.9} x $16\frac{5}{8}$ ^{42.2}PL - $14\frac{5}{8}$ ^{37.1}HEAD - 3 ^{7.4}TAIL - 4 ^{10.1}Weight - $34\frac{1}{2}$ lb.

Stomach sample taken - a few pieces of Codium.
Skin scraping retained; also 2 amphipods from mouth.
no skin baracles noted; lots of algal growth on skin, ventral surfaces of marginals.



Recaptured
see page 60 - Codium
sample from mouth - retained

1 May 79 ~~TERN:~~ [OCT 28 1993]

TUESDAY S - $19^{48.3}$ x $15\frac{1}{8}^{38.4}$

GB 417

GB 418

~~TERN~~

C - $20\frac{1}{8}^{52.1}$ x $18\frac{1}{4}^{40.3}$

3012 ~~LFL~~

PL - $14\frac{7}{8}^{37.0}$

3013 ~~REL~~

HEAD - $3^{7.6}$
TAIL - $4\frac{1}{8}^{10.5}$

Weight - $36\frac{1}{2}$ lbs

Sample of food (Codium) taken directly from mouth; Also sampled skin and plastron algae.

This turtle has fine silt imbedded in algal mat of carapace. Also lots of skin and plastron algae.

At 9 PM I talked to Laysan Island on CG radio - 5907.5 kHz upper side band (call letters KK 3388). Johnson have had about 20 pups this season. Rayson is a Kure - been there since March. They are waiting for permission from MMC to attach depth recorders. Kenyon will arrive Kure May 8 - Rayson will leave on the Cromwell.

Recaptured
see page 60 - Codium
sample from mouth - retained

40 FFS

state of Hawaii has put sand islet off limits.
Harrison is having Ranzon collect 2g of bird feathers for
heavy metal tests.

[FFS has been visiting other islands for glass balls.]

5/2
WEDNES

5/2/79

9AM

(FFS - NUNØ - NCS)

WEDNESDAY

MARS call through IEG on ME-4
to Jim (not home), then Ruth 735-1189

Skip-ER departed shortly thereafter to
stand by stricken KEOKA at Mars Reef
until USCG arrives - also to pull
lobster traps. Overheard call between
Giezentanner and Ranzon and Cummings.

GB 4

3014

3018

3016

Call expan

Backnote: Brian Roberts indicated that
they received orders from District to
be on the lookout for vessel LV577 at
FFS to take turtles. A. Heggers confirmed
this - got a call from Brent - week ago.

Readied Boston Whaler and launched - 1115AM

TO TRIG ISLAND - arrive 1145AM

noted islet to the NW ("Whitton islet")
is present - saw at least 3 seals hauled
out on it.

Noted that bunch grass is all dry -
brown - appears dead.

Messerschmidia is abundant.

No signs of turtle nesting.

No sooty terns.

* Note: No masked boobies (or frigates?) nest on
Tern Island.

ARR REPORTS REMAINING THREE TAGS
FROM LOG AT EAST IS.

[OCT 28 1993]

5/2/79 [TRIG CONTINUED]
WEDNESDAYAt 12:30 PM selected adult female basker for "A"
depth meter attachment NW end of Trig. photo.
photo# 25-26 Roll 9

GB 419

Right hind flipper $\frac{1}{4}$ missing.

3014 RFL

Skin barnacles sampled.

Meter attached by drilling 4 holes in postventral

3015 RFL

TRAILING

close to edge [one unused hole drilled further
in resulted in moderate blood drip; others

3016 LFL

produced no blood] Two electrical tie wraps
were placed at each end of meter.

(call expanded)

Stomach sampled - produced small pieces -
some orangish filaments.PL - $25\frac{7}{8}$ " = 65.7S. width - $25\frac{3}{8}$ " = 64.5HEAD - $4\frac{3}{8}$ " = 11.1TAIL - $8\frac{5}{8}$ " = 21.9

Turtle released at 1:55 PM -

42 FFS * Bally by Heathkit "Fireball"
see popular mechanics
and Playboy

5/2/79

WEDNESDAY

observed female basking, and large male climbed all over it, (photos) finally got on right, and stayed in copulation position 2:20 PM until 3:10 (still on when we departed).

I made close examination - could not tell if insemination was taking place. Tail has bent under, but female's hind flippers were in clasped position.

Female was tag recovery 1229 - right rear her basking was 1231 ♀.

Noted black pup mummified - and adult; another black pup was in pieces and probably from last year or many months ago.

weight =
(5) lb

TO WHALE-SKATE:

Arrive ~ 3:30 PM

Noted very large diameter log on west beach - no turtles (juveniles) seen in play. Ashore, I noted far fewer frigates than usual - sooty terns present, but colony does not seem very large.

Some ter globules noted along S West beach.
Again observed large, (and light colored) male

OK
OCT 25 1993
2 turtles

5/2/79
WEDNESDAY

5/2/79 climb up onto female in very shallow water.
 WEDNESDAY This was shortly after male got off after copulation - 3+ males were around them (photos).

Is there an imbalance this year in the $\sigma - \text{♀}$ ratio?

Departed W-S ~ 5PM

Hauled boat out at Tern at ~ 5:30PM

Checked along north seawall at ~ 6:30PM -

Saw one small juvenile, but missed.

Checked again just before dark but found nothing.

weight =

(5) OUNCES

DEPTH GAUGE NOTE: when checking gauges look for:

- 1.) scratches on plastic face and chrome knob that has ID letter;
- 2.) ID letter is readable correct position, prior to resetting to zero;

Called him at 9:30 AM this morning
through IEG

5/3/79
Thursday

Depart Tern, proceeded to Round/mullet -
on to East, and on to Little Gin
at 11:25 AM.

Lots of alga (sampled), all apparently from
lagoon side, on beach.

At the southwest side of island there
were ~ 19 depression, but probably from
last year - no sign of tracks!

Colony of black-footed, but doesn't seem
as large as other years.

Proceeded to examine Sand islet to the
south of L. Gin - 1 adult seal present.

Proceeded to Gin Island - some of same alga
present. Noted ~ 40 washed boobies on
egg - no albatross. West Bay of Gin with
bordering offshore reef forms a very nice
protected area for nesting turtles.
Could this be a breeding area for turtles
nesting on East Island?

Tagged ~ 7 ♂ baskers on Gin - no female
baskers.

Could Monel tag corrosion be a cause of
tumors? Many have been seen in region
of tagging site.
Noted Sand islet just to the north of
Gin - no seals present.

5/3/79
Thursday

OCT 29

5/3/79 /
 Thursday - Proceeded to East at 1:30 PM,
 Saw 3-4 juvenile in inshore waters of
 NE coast. Tried ^{scoop} netting, but missed.

Noted - 2 set of tracks on SP - very shallow digs
 1 set on area 6
 1 set area 2 - exoratory digs?

Photographed baskets at SEP - Roll 10.

Noted "weed" ^{all} along south shore. In some
 places, very thick row. Easy to pull out.
 Tugged select baskets and made
 a tag recovery (2659 LFL ^{area 17} ~~07~~).

⊕ Erosion has occurred this past winter
 along NE shore - area 15 slab has
 collapsed somewhat; photo area -
 ⊕ ← 55gal drum - rods are planted in these.

Report that AF helicopter on maneuvers had engine trouble and
 the closest landing site was Tern Island, not Kawai. Justin's plane was
 chartered to bring parts - mechanics. Total of 10 people at one time at AS.
 Report that Justin (& others?) were taken fishing - pay shore
 landed on islets. Fixed once and departed, but had to
 come back - not fixed properly. Another Justin flight -
 fixed right (maybe hydrolics?). They departed.
 This is when I saw it over Becker - C-130 above
 for refueling.

46



OCT 29 1993

DEPTH METER ~~B~~

5/3/79

Thursday

GB 420

1237 ~~RF~~

TRig -
North shore

5/3/
Thur

PL - $22\frac{7}{8}$ " = 58.1 / Female
HEAD - $4\frac{1}{8}$ " = 10.5 /
TAIL - $9\frac{1}{4}$ " = 23.5 /
STraight width - $22\frac{3}{8}$ " = 56.8

200
- nos. pp

171

1799 ~~(OFF)~~
~~LFL~~

3033 ~~LFL~~ new added

sampled stomach - small pieces


1718

photo roll 10

303

DEPTH METER C

47

[] OCT 29 19935/3/79
ThursdayTRIG-
Northshore2003 BLUE LFL
- NOS. FAINTLY VISIBLE -

1719 LFL

PL - $28\frac{7}{8} = 13.3$ ✓

Female

HEAD - 5 = 12.7 ✓

TAIL - 11 = 27.9 ✓

Straight Width - $27\frac{1}{8} = 68.9$ ✓1718 (OFF)
RFL3034 NEW
RFL

Attempt made to sample stomach -
tube would not go down very far -
nothing obtained.

Left hind flipper 1/2 missing - partly
healed, but very thick. Yellow scabs on
face, particularly whole chin and
throat area. White chalky
material on beak - does not look like
calcareous algae - Photo Roll 10
Hibernation ??

* FWS would seem to have no obligation to expend funds to maintain Tern equipment, etc.

5/3/79
Thursday

At 6 PM departure (from Trig) noted copulating pair come ashore out on sand point projection (quite wide this season).
Had to leave wet suit on Trig due to seals that had hauled up ^{high} cool air.

5/4/
FRIDAY

During evening I spoke with Kevin Michall, USCG, who has been setting a shark line of west end of Terbi. - uses fresh Ulua heads, etc for bait. Has seen seals steal bait on a number of occasions - never got hooked.

Saw his photos of sharks - also shark teeth. no tigers. also saw photos of CG on other islets - close ups of turtles - seals "rearing" up.

Report that clutch of turtles appears to have hatched inside fuel tank, retaining wall - CG personnel collected and released. This would have been from turtle that wandered inside (over top vent); Recall BW by C. Knight of Caretti and turtle.

Would LIKE ME
TO Buy 3 books -
- large size -

Need
C. Knight
photo
of Turtle
& Caretti

5/4/79
FRIDAY

Depart ~ 12:30 PM - Surveyed north side of Tern - noted semi-protected deep areas toward reef at NE end.

Arrived offshore Trig at ~ 1:30 PM - noted Turtle depth meter basking on sand projection beach - meter read 150' but "C" was not in line - but lined up when reset to zero. No scratches in face noted. Observed copulators off south shore.

- * Notes:
- 1) Criticism of FWS for not exercising control at FFS;
 - 2) Criticism for not visiting FFS more often;
 - 3) and criticism for not stress importance of FFS - treating it just like other units of HINDWR.

To Whale-Skate at 2:00 PM.

* toggled baskers - mostly all males; observed male "attacking" basking female - tried to crawl up on top of p/her. Bulk of Females may not have arrived yet.
- Pheromones leach into water from female basking in wave wash.

VSCG boat was in vicinity of W-S fishing. They later reported seeing large turtles "chasing" boat.

5/4/79
FRIDAY

Back to TRIG at 4:20 PM.
Turtle with meter **C** still in same
basking position - head facing out.
Copulating turtles are now on the
beach - still docked together.
Still there at 5:30 PM depart for
TERN ISLAND.

5/5/79
SATURDAY

Depart ~ 11:30 AM - as usual, followed
shoreline of south Tern to look for
tracks of nesting turtles. None seen. Proceeded
to Trig - noted Turtle meter **C** in same
"head out" location as yesterday afternoon.
Proceeded to W-S cove. Saw 2-3
juvenile turtles, but could not
scoop net them, due to their swimming
to deep water. Note that I have
not seen juvenile turtles here for
a long time, perhaps 1 1/2 - 2 years.

Proceeded to East Island where several
juvies were noted offshore.
A total of three captures were made
(1:30 PM - 4: PM).

5/5/
Saturday

Record

1835

305
Sam

305

1835 on
Tag put

Do

H

[OCT 29 1993]

5/5/79
Saturday

EAST

6/29/76
Page 103
FFS
Book 2

Recovery OFF

1835

3 1/2 mos
7 days

S - 17 1/4 = 43.8 x 14 1/8 = 35.9

S - 18 3/8 = 46.7 x 15 = 38.1
S - + 1 1/8 + 7/8

C - 18 1/8 = 46.0 x 16 1/4 = 41.3

C - 19 1/2 = 49.5 x 17 1/4 = 43.8
C - + 1 3/8 + 1

30SD RFL
same hole

PL - 14 5/8 NT = 37.1

30S1 LFL

HEAD - 2 3/4 NT = 7.0

TAIL - 3 NT = 7.6

25 lbs

WT - 28 1/2 lbs
+ 3 1/2

1835 only
tag put on

No skin barnacles

No evidence of tag on LFL

Right distal flipper has small 1/2 circle hole - possible old site of small tag.

Small round line indentations on 11th R & L marginals.

Pink collagen on carapace.

Stomach sampling - small amounts obtained.

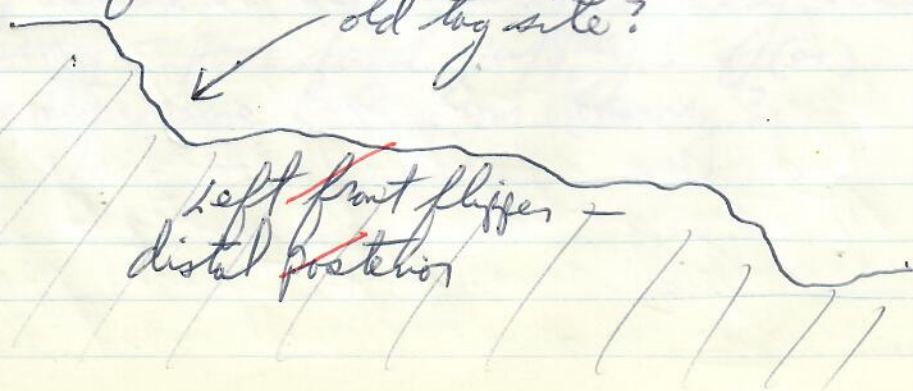
Tots of skin Calgae,

old tag site?

Dorsal

Head
↓

Left front flipper
distal portion



52 FFS

[OCT 29 1993]

green
Jungle

EAST ISLAND

5/5/79
Saturday10mons
22days

Recovery

2661

2662

GB-423

GB-424

6/13/78

S- $18\frac{5}{8} = 47.3$ ✓ x

15 = 38.1 ✓

S- $18\frac{3}{8} = 46.9$ ✓ x15 $\frac{1}{8} = 38.4$ ✓S- $-\frac{1}{4}$ x+ $\frac{1}{8}$ C- $19\frac{1}{4} = 48.9$ ✓ x17 $\frac{3}{8} = 44.1$ ✓C- $19\frac{1}{4} = 48.9$ ✓ x17 $\frac{1}{2} = 44.4$ ✓

C- 0

+ $\frac{1}{8}$ PL- $14\frac{3}{4} = 37.4$ ✓ PL-


HEAD- 3" = 7.6 ✓ NT

TAIL- $3\frac{3}{8} = 8.5$ ✓ TAIL- $3\frac{1}{8} = 7.9$ Weight- $27\frac{1}{2}$ lbs

Heavy skin algae - particularly ventral posterior
(sample collected).

No skin barocles noted.
Stomach sample collected - ~~small~~ small amount.

Lots of growth on legs - particularly
~~on~~ coralline -

[] ^{0W} OCT 29 1993

FFS 53

	EAST	ISLAND	
5/5/79	6/14/78	S - 15 ³ / ₈ = 39.7 ✓	13 ¹ / ₄ = 33.7 ✓
Saturday		S - 15 ¹ / ₂ = 37.5 ✓	13 ¹ / ₈ = 33.3 ✓
10. months		S - - ¹ / ₈	- ¹ / ₈
2 nd day		C - 16 ¹ / ₄ = 41.3 ✓	14 ⁷ / ₈ = 37.8 ✓
Recovery		C - 16 ³ / ₈ = 41.6 ✓	15 = 38.1 ✓
2686 REF		C - + ¹ / ₈	+ ¹ / ₈

2687 LFL

PL - 11 ⁷ / ₈ "	PL - 12 " = 30.5 ✓
HEAD - 2 ¹ / ₂ " = 6.3 ✓	
TAIL - 3 " = 7.6 ✓	TAIL - 3 ¹ / ₈ " = 7.9 ✓

16 ¹/₂ lbs

Weight = 16 ¹/₂ lbs

Turtle seems frail - little muscling around shoulder areas. algae on plastron and ventral skin.
 Indentation (healed) in 9-10th marginals left.

Seemed to tire easily when following with boat.
 All turtle (3 total) were generally this way.
 Starving - poor food supply? (or)
 Recently came up from dormancy?

5/5/79 Surveyed east eroded track and
Saturday - shallow digging in Area 16; also fresh
track the entire length of Sand Point.

Tagged several baskers and made tag
recoveries.

Observed juvenile (~20lbs) basking on NEP.
Turned over (very active), but it "righted"
itself while I was away.

Found large glass ball with net at NEP.
Codium was growing on certain portions of net;
(sample retained).

Note that yesterday A. Kam found large
Janthina shell on north Trig beach.

~~At~~
At ~3:45 went to Trig - Turtle meter **c**
at same basking site - but now head is
aimed inland. Still there at 5 PM
departure for Tern Island.

* Chief Staben loaned me one roll ASA 25-36 exp.

5/6/79 Depart Tern ~12 noon - South Tern beach
SUNDAY had two small SA seals and one adult.
AT Trig noted Turtle meter **c** head in
basking at same site - meter read zero -
turtle saw boat and went back into
water.

5/6/79
SUNDAY

CB-4
CB-4

307

307

* page 911 - 1827 Condoms made of tortoise shell
and leather - The People's Almanac No. 2

* NOTE ARTICLE "TORTOISE WINS AGAIN"

Nov. 1978 PLAYBOY p 146-147

Companies: Boyd Chemists; Carter; Colibri; Timus
H.J. Sotter; Canal Street Plastics

5/6/79 SUNDAY Proceeded to West Whale-Skate where four juveniles were captured with scoop net. 12:45-2:45 PM

[OCT 29 1993]

GB-425

GB-426

S-16 1/4 = 4.3 x

12 7/8 = 32.7

307 RFL

307 LFL

C-17 1/4 = 43.8 x

16 = 40.8


PL- 12 1/2 = 31.7

HEAD- 2 1/2 = 6.3

TAIL- 3 1/8 = 7.9

Weight - 19 1/2 lbs

Stomach & ventral margins algae sampled.
Sink coralline present;
Sharp pointed claws;
Thin translucent laminae trailing edge of
front flippers and margins.
No skin barnacles.
Heavy algal growth on skin.

[ OCT 29 1993]

5/6/79 - ~~Whole-Shake~~ capture:
SUNDAY

GB427 S - $18\frac{3}{8} = 46.7$ ✓ x $14\frac{3}{8} = 36.5$ ✓

3036 PFL C - $19\frac{1}{2} = 49.5$ ✓ x $17\frac{3}{8} = 44.1$ ✓

3064 LFL PL - $14\frac{3}{4} = 37.4$ ✓

HEAD - $2\frac{7}{8} = 7.3$ ✓

TAIL - $3\frac{1}{8} = 7.9$ ✓

no skin baracles; Weight - 32 lbs
Stomach ~~saw~~ sampled; Thick pink coralline from
saw ^{and plastic} ~~put~~ in sample vial 3071.
Sharp pointed ~~claws~~;

FRONT limb

← distinctive

Also ~~triled~~ edges of both front limbs partially
missing but healed.

Heavy algal ~~growth~~ on skin.

[OCT 29 1993]

5/6/79 ~~Whole Skate capture:~~
 SUNDAY

GB-428

S- $14\frac{5}{8} = 37.1$ ✓ $12\frac{1}{2} = 31.8$

3073 ~~REL~~

C- $15\frac{3}{8} = 39.0$ ✓ $14\frac{1}{8} = 35.9$

3074 ~~LFL~~

PL- $12 = 30.5$ ✓

HEAD - $2\frac{1}{2} = 6.3$ ✓

TAIL - $2\frac{5}{8} = 6.7$ ✓

lbs

Weight - $17\frac{1}{2}$ lbs

no skin barnacles;
 pink coralline;
 lots of algal growth on skin - particularly ventral.
 V-notch shaped piece missing from ~~RHL~~;
 Stomach sample
 4th lateral and 5th central divided evenly
 into two thereby producing 6 centrals,
 5 laterals.

[OCT 29 1993]

5/6/79 ~~Whale~~ Skate capture:
SUNDAY

GB 429

S - $18\frac{1}{8} = 46.8$ ✓ $14\frac{7}{8} = 37.6$ ✓

3079 RFL

C - $19 = 48.3$ ✓ $17\frac{1}{4} = 43.8$ ✓

3080 LFL

PL - $14\frac{3}{8} = 36.5$ ✓HEAD - $2\frac{3}{4} = 7.0$ ✓TAIL - $3\frac{1}{4} = 8.2$ ✓WEIGHT - $29\frac{1}{2}$ lbs

Only light algal growth on skin & plastyn;
 Knobby, perhaps tumorous, growth
 immediately under 1st marginal right;
 A few skin barnacles present;
 Pink coralline;
 Stomach sampled.
 Darkish color to carapace, with blackish
 dorsal limbs.

[OCT 29 1993]

5/6/79

SUNDAY

Had Alan drop me off on W-5 for
 ~20 minutes; only have seen 2-3 of the
 small sharks in West W-5 cove.
 Tagged a few basking turtles.
 Earlier I had Alan take photos of
 me measuring / holding juvenile turtle 3074.

Arrived at Trig at ~4:30 PM; Tagged
 baskers and turned female 941 - data as
 follows:

GB 430

941^F

PL - $27\frac{1}{4}$ " = 69.2 ✓
 S. width - $27\frac{3}{8}$ " = 69.5 ✓
 HEAD - $4\frac{7}{8}$ " = 12.4 ✓

3083 RFL^{new}TAIL - $7\frac{1}{2}$ " = 19.1 ✓3084 LFL^{new}


Telethermometer used - flexible probe
 in ~4" past "three stripe" mark = 85.6°F

Depth meter **D** attached -

D slightly to counter-clockwise when set a zero.

Stomach sampled - bluish material + orange filaments;
 skin baracles present.

5/6/79 Turtle meter ^{seen} cⁿ basking on beach at
 SUNDAY 4:30 PM - still there at 5:45 departure
 time - meter read 15° - subsequently
 reset to zero (c-lined up correctly)!

 [OCT 29 1997]
 5/7/79 Call from Easy Rider VHF at ~ 1030 AM - towing
 MONDAY Keola from Maro Reef - will refuel by
 East Island this afternoon.
 Surveyed along north seawall for turtles -
 Caught two - one was a short term
 recapture 3012 & 3013 - Suspected
 mouth and found Codium - retained sample
 GB433

[ OCT 29 1993]

5/7/79 Juvenile Scoop net capture at Tern Island
 MONDAY - seawall:
 1240 PM

GB 431

$$S - 16\frac{3}{8} = 41.6 \times \quad 13\frac{1}{2} = 34.3 \times$$

3085 RFL

$$C - 17\frac{1}{4} = 43.8 \times \quad 15\frac{3}{4} = 40.0 \times$$

3086 LFL

$$PL - 13\frac{1}{8} = 33.3 \times$$

$$HEAD - 2\frac{7}{8} = 48 \times$$

$$TAIL - 2\frac{3}{4} = 70 \times$$

WEIGHT - 21 $\frac{1}{2}$ lbs

Stomach sample taken - retained

note that Tern IS. - USCG FFS ^{NO} support, logistics, medical or any other service ~~was~~ required.

5/7/79
MONDAY

5/7/79
MONDAY

At ~ 2 PM, loaded gear in FWS whaler and transferred it to Faby at anchor with Keola (85') to the SW of East Island. Beer cans and small amount of fuel going into the water.

also present on Tern Island

Proceeded to East Island where we spent 20 minutes pulling ^{exotic} weeds* that are growing along south shore. Tagged a few boobies. Saw two juveniles feeding on ^{East} Reef - Caught one, as follows:

GB 432

3:40 PM
More tracks, false dig noted on Sand Point & Area 17.

OCT 29 1993

- 3088 ✓ S - 16 1/8 = 40.9 ✓ x 13 3/4 = 34.9 ✓
- 3089 ✓ C - 16 7/8 = 42.0 ✓ x 15 5/8 = 39.7 ✓
- PL - 13 3/8 = 33.9 ✓
- HEAD - 2 5/8 = 6.7 ✓
- TAIL - 3 1/8 = 7.9 ✓

5/8/79
TUESDAY

Small pieces removed from mouth - may be Caulerpa - retained.

WEIGHT - 25 1/2 lbs

5/9/79
WEDNESDAY

5/7/79
MONDAY - Proceeded to Trig where turtle meter C was observed; I went ashore and took reading - Zero (0) - apparently been ashore all night, all day.

Returned to Tern Island, picked up remaining gear and ^{ET} Chief Staben (and SA) accompanied us back to Easy Rider, arriving about 5:5 PM. Several dark rain showers in area. Departed FFS about 8:30 AM, going out past La Penouse then south past Disappearing, then East.

5/8/79
TUESDAY

Making ~ 4.3 knots with keels 1200' behind. Spotted buoy with orange strip - lots of barnacles.

NOTE:

HIRAN

- Form of Shoran
Pages 330 and 930 of Boudich

* Use Freedom of Information Act for NHI operation?

5/9/79
WEDNESDAY

P-3 aircraft circled over us about 1 PM - continued on course to the West.

(Puffenberger informed via radio of calm anchorage at FFS-East)

5/9/78
WED.
from
The Peoples Almanac &
Tattoo Club of America, Inc. (free)
112 W. First Street
Mt. Vernon, N.Y. 10550

Turtles International Association, Ltd.
P.O. Box 96
Westchester, Ill. 60153 (membership \$1.00)

2130Z NR04 DE NMO

P 052110Z MAY 79
FM JRCC HONOLULU HI
TO RUHPGIA/COGARD FRENCH FRIGATE SHOALS HI
INFO RUHPGIA/COGARD COMMSTWPHMMNGU7#.B9
KG GRNC
BT

UNCLAS//NIG130//
ALERT F/V KEOLA

1. SITUATION:

A. 022040Z MAY 79 FUBJ VSL REPORTED BY F/V EASY RIDER
DISABLED MARO REEF, AND REQUESTED TOWV PTPEGOZ F/V EASY
RIDER REPORTED SUBJ VSL HAD MADE TEMPORARY REPAIRS TO
ENGINE AND WOULD BE ESCORTED BACK TO HONO. ; 5MWVZ VPZAG
VIDER REPORTS SUBJ VSL IS UNDERWAY AND WILL BE ACCOMPANIED
TO HONOLULU, PRESENTLY ENROUTE FFS ETA 2 1/2 TO 3 DAYS TO
TRANSFER FUEL FROM F/V KEOLA TO F/V EASY RIDER.

B. VSL DESC: 82 FT F/V KEOLA/WX6214. WHITE FIBERGLASS
HULL WITH BLUE TRIM.

2. ABOVE PROVIDED FOR YOUR INFO ONLY. NO CG ASSISTANCE ANTICIPATED.

BT

5/10
Thursday

5/11/79
FRIDAY

5/12/79
Saturday

5/10/79 ~ 50 miles a beam of Nihoa at ~ 8 AM.
 Thursday Continue to have very calm seas -
 mild swell out of the East. Averaged
 ~ 4.5 knots over past 24 hours. If this
 continues, we should arrive Honolulu
 at 1 PM, Saturday. Good observation conditions.
 Note that during the numerous trip
 made to N.H.I. I am only aware of
 one "at sea" sighting of a turtle -
 this was made by the Cromwell -
 recall that position was ~ 50 miles
 west of Nihoa - position was:

5/11/79
 FRIDAY

At ~ 9 AM saw flashing light on ~~the~~ Nihoa and cliffs
 of Nihoa.

At 9 AM off south shore of Kawai - calm, almost
 glassy seas. Report that we averaged 6 knots
 last 24 hours. $6 \overline{) 166} = 17 \text{ hrs to go? } 4 \text{ AM?}$

Evening - F/V "North⁴⁰west" or "Northwest"
 reported on the buoy at Kure -
 waiting for fuel. also reported that
 it may go to P&H to fish (outside?)
 ulua.

5/12/79
 Saturday

arrive Honolulu - 5:30 AM

Additions for Term Report

1. Statement by Lusty to take turtles - USCG - FWS
2. USAF Helicopter / KEOLA Problems
3. No Agency - opinion asked for - NMFS - Naughton
4. Implications of Necker - (Nihoa?) - Gardner Pinnacles
^{op. H. - interest} access - Turtles seals - ^{catch stats} Cooper tests
5. Ed's Statement - would go ashore anyway
6. Affirmative action, Sec 7 - EDF
7. FWS charged with Refuge - They should make decisions on their role/responsibilities
8. Shomura now has responsibility for monk seal
9. References
10. History of abuse by fishermen - some the same ones
11. FWS would seem to have no obligation to expend funds to maintain term equipment, etc.
12. FWS has not exercised control at PFS
13. PFS is most important unit of HINWR ^{not like others}
14. Criticism for not visiting PFS more often
- 15.
- 16.

ENTD OCT 26 1993

NOTE: Tag 3001 not located on 4/28/79 - MUST have been put on basket 4/27 - either doubled up with another tag - or on turtle by itself.

BASKET TAGGINGS

DATE/TIME

(NECKER) TAG NOS SEX LOCATION/OBSERVATIONS

4/26/79 2996 FL Male ^{NECKER} Basking on ledge

Thursday 2:45 PM
" " " "

[3003 RFL] [2997 LEFT FL] Male
→ Added while basking 4/27/79 Broken down area along right posterior carapace

4/27/79 FRIDAY 11:30 AM

2998; [3005] ^{added 4/25/79} Female eye TMS Basking on ledge

2999; 3002 ^{ENT. #282} Female 6/24/84 56 EAST-N. " "

3000; [3009] ^{added 4/28/79} Female Left eye TMS " "

3001 ♀ ^{ENT. NO. 247} Female EAST-PPS-N 6/10/82 581.5cm Basking on ledge

4/28/79 11:20 AM SATURDAY

Recovery = " [not checked. TAKEN OFF] 2394 on 3004; 3006 Female [lower size limit of adult] 8/26/77 NECKER I 2392 NOT THERE MISSING

ALL SHORT TERM Recoveries
4/29/79 ~ 12:15 PM SUNDAY

[3000]; [3009]; 2996; [3005]; [3003]; [2998]; [2997]; 2996
+ 1 new tag not read. 2996

ALL short term Recoveries
4/30/79 9:15 AM MONDAY

[3004]; [3006]; [3005]; [2998]; [3009]; [3000]; [3002]; left [3001] female (thick flesh on right flap)

NECKER SUMMARY: 7 taggings - 1 long term Recovery

BASKET TAGGINGS
[FRENCH FRIGATE SHEALS]

DATE/TIME	TAG NOS.	SEX	LOCATION/OBSERVATIONS
5/2/79 WEDNESDAY	3008 LFL	Female	TRIG ^{ffs} (Blackish) see p41
5/2/79	3014; 3015; 3016	METER A	TRIG
5/2/79 in shallow water	3017 LFL	Female	ENTERED NO. 136 W-S many cop. BITES
	RECOVERED 5/6/79 W-S up 331		
5/2/79	3018 RF	Male	W-S
5/2/79	3019	Female	W-S
	RECOVERED 5/6/79 W-S		
5/3/79 Thursday	3020	Male	GIN
5/3/79	3021	Female	in shallow water GIN
5/3/79	3022	big Male	cracks in shell GIN
5/3/79	3023 LFL	Male	IME ventral R flipper GIN
5/3/79	3024 RFL	Male	Left ^{front} flipper all the way off - healed GIN
	5/13/83 JRM/L.G.W		
5/3/79	3025	Male	LHL 1/2 off - healed GIN
5/3/79	3026	Male	Two big barns anterior carapace GIN
5/3/79	3027	Male	Mushroom IMR - R dorsal proximal front flipper GIN
5/3/79	3028 RFL	Male	SEP. EAST
5/3/79	3029 RFL	Female	ENTERED NO. 137 NEP EAST

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BASKER TAGGINGS

DATE/TIME	RECOVERED	TAG NOS	sex	LOCATION/OBSERVATION
5/3/79 Thursday	RECOVERED 5/6/79 - whale-skate	2710 RFL [added 3030]	MALE	left hind 1/2 missing right hind 1/4 miss (on tag 5/4/79)
5/3/79 4:15 PM		3031 RFL	Male (Bitten)	TRIG
	6/9/80 W-S	(new 3762)		
5/4/79 FRIDAY 2:45 PM		3037 RFL	Female	NW point W-S
5/4/79 2:45 PM		3038 RFL	MALE (no scabs)	NW point W-S
	5/7/83 by SRL 76.8 cm BASK	6365 LPL (new)		6/89 ent #90
5/4/79		3039	? MALE	W-S
5/4/79	ENTERED NO. 79	3040	MALE	→ all in a row along west W-S
5/4/79	441 ENTERED NO. 41	3041	MALE	W-S
5/4/79		3042	MALE	W-S
5/4/79		3043	MALE	W-S
5/4/79		3044	MALE	W-S
	ENT. #107 6/11/84 W-S			
5/4/79		3045	MALE	W-S
5/4/79		3046	MALE	W-S
5/4/79 3:30 PM		3047 RFL	MALE	LHLimb 3/4 miss two marginal pieces missing but healed out of left posterior scapulae. 6/9/80 - W-S

BASKER TAGGINGS

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DATE/TIME	TAG NOS	SEX	LOCATION/REMARKS
5/4/79 420PM FRIDAY	3048 LFL	BIG MALE	TRIG
5/4/79	3049 LFL	MALE	up high on beach; left hind 3/4 miss a big knot at TRIG
5/5/79 Saturday	3052 RFL	MALE	EAST injury to root of tail; RHL 1/2 missing - healed. SAND POINT
5/5/79	3053 LFL	MALE	SAND POINT EAST ENTERED NO. 65
5/5/79	3054 LFL	Female	SAND POINT EAST Through EXISTING hole; Deep cuts in anterior compare
5/5/79	3055	Female	SAND POINT EAST (Recovered 5/7/79 SP East) piece missing LHL
5/5/79	3056	Male	EAST ENT. #104 6/1/84 east 3439 new
5/5/79	3057 RFL	Female	NEP EAST (Recovered 12/22/79 RFL) LHF PARTLY MISSING
5/5/79	3058	MALE	NEP EAST EYE TMR
5/5/79	3059	MALE	NEP EAST
5/5/79	3060; 3061	MALE	NEP EAST
5/5/79	3063 RFL	MALE	SEP EAST TAG NOT ON very far
5/5/79	3062	? MALE	EAST ENTERED NO. 66 NOT recorded in field notes - but must have been put on basker at EAST

ENTR OCT 27 1993

BASKER TAGGINGS

DATE/TIME	TAG NOS.	SEX	LOCATION/Remark
5/5/79 SATURDAY	ENTERED NO. 67 3065 RFL	MALE	TRIG
5/5/79	NO. 73 3066 RFL	MALE - But short TAIL	TRIG
5/5/79	RECOVERY 951 RF; 3067 RFL	Female	TRIG
5/5/79	3068 LFL	Male	TRIG
5/5/79	3069 RFL	MALE	TRIG
5/5/79	6/8/80 W-S 3070 RFL	MALE	TRIG many small EYE TAGS
5/6/79 SUNDAY	3075 6/8/80 - W-S (new 3556)	MALE	W-S
5/6/79	10324 3076	Female	W-S
5/6/79	3077; 3078 LFL	MALE Bitten 2 BARS 2nd LAT RIGHT	W-S
5/6/79 4:35 PM	3081 RFL	MALE	TRIG
5/6/79	6/79 TRIG-B 6/9/80 TRIG-B 3082 small (New 3130)	Female	TRIG
5/7/79 MONDAY	3087	MALE "hook" at end of tail	EAST sand point

x Recorded in master data sheet

TURTLE TAG RECOVERIES - FRENCH FRIGATE SHOALS -

DATE	TAG NO.	SEX	LOCATION/REMARKS	DATE
5/2/79 WEDNESDAY	1231 4/13/76 Trig-B	Female	TRIG BASK	5/3/79 Thursday
5/2/79	1229	Female	TRIG "mounted" while BASKING	5/4/79 Friday
5/2/79 3AM TAG?	deformed- cracked PC's	Male BASK	TRIG Tag on right trailing	5/5/79 Saturday
5/2/79 4:AM	1212 2824 RFL	Male not recorded	W-S plus large old style tag BASK	5/5/79 Saturday
5/3/79 Thursday	2659 LFL 2600 East-B 6/13/78	Male	area EAST BASK	5/5/79 Saturday
5/3/79	2710 RFL 6/15/78 East shore W-S BASK	Male (added 3030)	left hind 1/2 missing TRIG BASK	5/5/79 Saturday
5/3/79 4:15PM	2614 RFL 6/12/78 Trig-B	Male (added 3032 LFL)	BASKING TRIG AT NEW POINT	5/6/79 Sunday
GB421	27 1/2 PL = 69.9 10 3/4" TAIL		sampled stomach 3x; small pieces of alga - flushed with seawater.	5/6/79 Sunday
5/3/79	1237 RE 4/13/76 Bask-Trig (includes C measurements)	Female	DEPTH METER B BASK TRIG	5/7/79 Monday
5/3/79	2003 Blue; 1719 LF; 1718 (OFF) (faintly visible)	Female	DEPTH METER C BASK TRIG	5/18/79
5/3/79	1239 RF 4/14/76	Female	BASK TRIG	5/22/79
	Small ♀-Bask Trig			5/25/79

ENTD OCT 27 1993

DATE TAG NO. SEX LOCATION/REMARKS

- 5/3/79 X 2004 BLUE [partly broken] MALE BASK ^N TRIG
Thursday 3035 RFL ^{new} Last seen July 76 O-Tern
- 5/4/79 X ~~27-7, 29~~ RF ~~28~~ last seen: MALE BASK TRIG
Friday Blue tag on left flap = 2001 JUNE 1978
- 5/5/79 X 1202 RF; 3087 RFL ^{new} Female ^{NBP} BASK EAST
Saturday (Recovered 5/7/79 East Sand Point) LHL PARTLY MISSING
- 5/5/79 X 2259 LFL Female SEP BASK EAST
Nest-East
- 5/5/79 X 951 RF; 3067 RFL ^{new} Female Last seen BASK TRIG
May 75 BTRIG
- 5/6/79 X ~~1230~~ RF see two other consecutive last seen: 25 Feb 79 TRIG MALE BASK TRIG
- 5/6/79 X 941 F; 3083 RFL; 3084 LFL ^{new} FEMALE BASK TRIG
2/17/75 TRIG-B DEPTH METER D C-33 1/4 X 33 1/8
- 5/6/79 X ~~2828~~ LFL ^{see above consecutive} recovered as TRIG 27 JUNE 20, 1978 MALE BASK TRIG
- 5/7/79 X 2269 RFL last seen July 1977 East Female sand point BASK EAST
Monday

REPORTED BY WHITLOW - FEB 79 EXPEDITION

- 2/18/79 X 1258 Female south beach TRIG-BASK
- 2/22/79 X 2616 (old 747) Male TRIG-BASK
- 2/25/79 X 1230 Male TRIG-BASK

BASKING TURTLE CENSUS

<u>DATES/TIMES</u>	<u>Male</u>	<u>Female</u>	<u>SA</u>	<u>Remarks</u>
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4/26/79
Thursday

4/27/79
FRIDAY

2 PM

1 ♀ back

R5 #2
TEK

2:25 PM

Depart

waves up

10 PM (bedtime)

Nothing

4/28/79

12:15 AM

1 Adult

Saturday

1 AM

Nothing

6:45
SUNRISE

5:30 AM

1 adult

6:30 AM

Nothing

7: AM → 9 AM

increased from 1 to 6 (5 ♀, 1 ♂)
one female has gouge in 2nd LAT eye

9:50 AM

male arrived (5 ♀ 2 ♂ total)

DATE/TIME	MALE	FEMALE	SA	Remarks
4/28/79 12:00 AM SATURDAY				Moved in for tagging after taking photos (excepted) first part of Roll 6. All eventually departed slowly; Male 2997 was last to leave, female - TMS on eyes.
11:35 AM		2391 ^{ref.}		juvenile net of last night hauled out next to adult female (opposite direction). Short time later, large seal hauled out right past juvenile.
				Juvenile waiting for adults to leave??
12:15 PM				Female departed (wave coming up); 2391 swimming in channel w/ another female.
12:25 PM				Adult ♀ hauled out (lots of algae on shell - may not be same as above. yes [3000 & 3009] tags read
~1:30 PM				Both turtles departed same time; were being lapped by waves regularly.
4/29/79 12:10 AM SUNDAY				1 Adult (Big speckled)
1:15 AM				0
5 AM				1
5:45 AM				2 ♀
8 AM				2 ♀ (apparently same ones)
8:25 AM				2 more ♀ hauled out right at the same time - one has piece of lamina missing, 2nd central, tagged yesterday; one of turtles movement made earlier, turtle move up. 4 ♀ Total
8:35 AM				another ♀ hauled - now 5 ♀ total
9:20 AM				Two ♂ hauled out at same time - one is 2997 - Took same position as yesterday - (5 ♀ 2 ♂ total)

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BASKING TURTLE CENSUS

<u>DATES/Times</u>	<u>MALE</u>	<u>FEMALE</u>	<u>Remarks</u>
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29 April 79
SUNDAY

At 12:15 PM one of the first two turtles out tried to crawl out, but seal and turtles blocked the way. Climbed partly over one turtle - disturbed other turtle which slid off edge into deep pool. Original turtle stopped when reaching wet rock, started up again ~ 1/2 minute later, stopped momentarily at ~~wash~~ wash, and then continued in.

Shortly thereafter, I went down to tag/check tags - found ~~3009 ♀~~, ~~2996 ♂~~, ~~2998 ♀~~, ~~2997 ♂~~; + another new tag not read = 5 total.

All went back except 3009 ♀.

This turtle went in ~ 1:10 PM
(see noted in narrative on snorkel survey)

30 April 79

Monday 12:05 AM

0

1:00 AM

0

4:20 AM

1 female

5:45 AM

2 females

6:35

female out basking - 3 total

7:55 AM

female out basking - 4 total

8:30 AM

female out - 5 total

BASKING TURTLE CENSUS

95

Dates/Times	OFFSHORE			Male	Female	TOTAL	LOCATION & Remarks
	M	F	I				
1 MAY 79							
1 MAY 79							
2 MAY 79 (2:30pm)	1	1	2	5	0		TRIG
2 MAY 79							
Wednesday							
2 May 79 (4pm)	2	1	8	3	2	13	W-S
2 MAY 79							
3 May 79 (12 noon)	-	2	-	-	1	-	L. BIN
Thursday							
3 May 79 (12:30pm)	3	-	7	-	-	-	BIN
3 May 79 (2pm)	-	4	2	4	4	17 ^{16 sep}	EAST
3 May 79 (3:40pm)	-	-	-	-	-	2	Mullet
3 May 79 (4pm)	-	-	4	4	4	9	TRIG
4 May 79 (1:30pm)	2	1	-	5	5	1	TRIG
FRIDAY							
4 May 79 (2pm)	-	6	-	-	-	many males 16	W-S
5 May 79 (3pm)				8 ^(2 sep) 8 ^(3 sep)	7 ^(1 sep) 7 ^(3 sep)	12 ^{all sep}	EAST
Saturday							
5 May 79 (4:30pm)				5	7 ^(turtle's meter)	2	TRIG

MONK SEAL TAG RECOVERIES

<u>DATE</u>	<u>TAG NO.</u>	<u>STAGE</u>	<u>LOCATION / REMARKS</u>
5/2/79	line scar	Adult	Half way around midsection - photos TR16
5/3/79	on TR16		against strap w/ another Adult (mate?)
5/2/79	old 212	A	(scar head) w/pup (very new) W-S

♀ FRIGATE BIRD 4/2/79 TR16 -
737-37354

101

calculate
to tails, different
in color ink

MONK SEAL CENSUS

<u>DATES</u>	<u>Times</u>	<u>Adult</u>	<u>SA</u>	<u>LOCATIONS/OBSERVATIONS</u>
4/26/79 THURSDAY	~ 11:30 AM	9 8 (1 of these very thin)	4 (1 quite small)	ledge Boulder Beach NO PUPS
4/27/79 FRIDAY	6:30 AM - some seals started showing up on ledge. 9 AM	8 5 (1 with heated back/belly) ^{1 with photo} 1	3 1 0	ledge Boulder groove below ledge campsite
	9:30 AM	10	3 (2 small)	ledge
	11:30 AM	10	5 (4 small)	ledge
	1 PM	9 2 3	3 1 0	ledge groove Boulder
	3:15 PM	Noted seal defecate <u>large</u> streaks just outside reef of ledge. watched 3 seals in row leave bay, but past NW point (feed in group?)		
	4:45 PM	3 2 4 (20 ⁺ , 1 PREG, 1 UNK)	4 1 0	ledge groove Boulder
4/28/79 SATURDAY	8 AM "Right eye glassy" NOTED	9 6 (1 thin) 1	3 1 0 (3 small)	ledge Boulder Groove
	1:30 PM	12 4 (1 FTHIN) 1	5 SA 0 0	ledge Boulder Groove

DATE

4/28
SA4/29
SUN

<u>DATES</u>	<u>TIMES</u>	<u>ADULT</u>	<u>SA</u>	<u>Location/Observations</u>
4/28/79 SAT.	4:05	seen from distance: 3 (at least)		Base of Bowl Hill
	6:45	4 1 4 (1 thin)	2 0 0	Ledge Groove Boulder
4/29/79 SUN.	7:30 AM	7 4 (1 thin) 0	2 0 0	Ledge Boulder Groove
	8:45 AM	10 (3 hauled out at about sometime)	2	Ledge
	1:45 PM	noted seal in pool with large white area on left front flipper. - not seen again.		
	2 PM	8 1 2 A	4 0 0	Ledge groove Boulder

Smallest SA on ledge seems to have scar ~1/2" long just behind right front flipper

4:10 PM Noted two seals come in through reef one after the other (can "buck" current through entrance, if they want to)

6:45 PM	3 1 0	0 0 0	Ledge Boulder Groove
---------	-------------	-------------	----------------------------

Shortly thereafter 2 A's on ledge departed - Is everyone gone because it's a good night to feed? Or, ~~was~~ wave wash or other factors?

MONK SEAL CENSUS

DATE	TIME	ADULT	SA	LOCATION/OBSERVATIONS
4/30/79 Monday	5:45 AM	3		ledge
	6:10 AM	1 arrived		
	6:25 AM	1 arrived		straight scar of left head
	7:35 AM	Two seals		noted "playing" w/ adult female
	7:45 AM	♂♀ pair		turning circles, frolicking near ledge. Female has puncture wounds on back (from male?) - also bite on front flipper (saw male do this while they were together on ledge last night. ♂ attempted to mount ♀, flippers were placed low around body. ♀ on back on one occasion.
	8 AM			Seal seen coming in reef.
	8:20 AM			Another adult seal seen coming in.
	8:35 AM	4	2	Boulder Beach Ledge
5/1/79 Tuesday	~2 PM	1 ♀	3 (all LYP?)	FRENCH FRIGATE SHOALS Tern Is.

DATE

5/2/79

WEDNESDAY

5/2/79

5/3/79

Thursday

5/3/79

5/3/79

5/3/79

5/3/79

5/3/79

5/3/79

TOTALS for SANDS SURV

MONK SEAL CENSUS

DATE	TIMES	SWP	ADULT	P	SA	LYP	LOCATION/OBSERVATION
5/2/79	12:30 AM	0	14 ^{3M} _{3F}	0	2 ^{IF}	0	TRIG one dead black pup (w/ulcers) one mummified dead adult
WEDNESDAY (excluding "Whittow" Islet, NW of TRIG)							
5/2/79	4:00 AM	10	25 ^(molt)	12	8	4	W-S
5/3/79	12 NOON	4	4	4	1 ^{green}	0	L. GIN
Thursday							
5/3/79	12:00 PM	0	1	0	0	0	Sand Islet just south of L. GIN
5/3/79	12:30 PM	0	9	0	5	1	GIN
5/3/79	2 PM	10	20 ^{1 molt 3 preg}	10	10	5	Dead blk pup w/maggots EAST
5/3/79	3:30 PM	-	3 ^{all green}	-	-	-	BARLE
5/3/79	3:40 AM	1	6	1	-	-	MULLET
5/3/79	3:40 AM	7	7	9	-	-	ROUND

TOTALS for ISLANDS SURVEYED - 32 89 36 26 10

excluding Shark, Tern, Disappearing

CLIMATIC

DATE		OBSERVATIONS	DATE
4/23/79		Glassy sea - light kona around Oahu	5/3/79 Thursday
4/24-4/25		Running to Necker - COLD IN EVENINGS 15-20KT Trades	5/4/79 Friday
4/26 Thursday	Necker -	mostly clear skies - moderate trades rough sea by gap as afternoon tide rises Sunset ~6:25PM	5/5/79 Saturday
4/27 Friday	Necker -	stars visible most of night - sunny AM - moderate winds 13:45PM - seawater = 24.75°C	5/6/79 Sunday
4/28 Sat	Necker - Sunrise ~6:45AM	clear skies during night; bright sun AM, light wind in Bay. Some clouds in afternoon - light to moderate winds. very cool in afternoon at GAP due to shade from setting sun.	5/7/79 Monday
4/29 SUN	Necker	Some clouds at night but no rain. Choppy morning in Shark Bay. Sunny during afternoon - very few clouds. Evening feels much warmer than previous three.	5/8/79 Tuesday
4/30 Monday	Necker	A few rain showers in morning; calm water at NW "gap" landing.	5/9/79 Wednesday
5/1/79 Tuesday	FFS - TERN	medium to strong wind - rain showers most of the day.	5/10/79 Thursday
5/2/79 WEDNESDAY	FFS - TERN - TRIG - WS	Moderate - strong Trades; sunny at times, but cloudy light squall periods.	5/11/79 Friday

CLIMATIC

DATE		OBSERVATIONS
5/3/79 Thursday	FFS - L. Gir, Gir, East, Round, Mullet, Trig, Tern	light trades in morning Moderate afternoon; Sunny, cooling in evening.
5/4/79 FRIDAY	FFS - W-S, TRIG, Tern	light winds during morning increasing to moderate in afternoon - Sunny.
5/5/79 SATURDAY	FFS - EAST - TRIG TERN	Moderate Trades - lots of sun from ~10am on.
5/6/79 SUNDAY	FFS - W-S - Trig - Tern	light trades, sunny until late afternoon when some clouds and rain showers occurred; light SW swells.
5/7/79 MONDAY	FFS	calm seas except for light SE chop - dark rain showers during the afternoon.
5/8/79 TUESDAY	ENROUTE TO Honolulu via - 20 south of Necker	calm seas, little winds, small swell out of the east.
5/9/79 WEDNESDAY	ENROUTE TO Honolulu	Calm seas - light & variable winds
5/10/79 THURSDAY	ENROUTE TO Honolulu	
5/11/79 FRIDAY	ENROUTE TO Honolulu	
5/12/79 Saturday		

Remains calm sea across Kawai channel.
to Honolulu

- Need slide projector for home -
NY order?

PHOTO LOG

DATES

ROLL

SUBJECTS

Dates

4/24^{#718}
Tuesday
4/24 -
4/24/79
Thursday

I
ASA 64
EL

NOTE:
LIGHT METER BATTERY
WEAK - MAY HAVE
RUINED SOME
OVEREXPOSE??

Christian & Lin at Departure on Boat;
4/26 BASKERS ON LEDGE w/ CRABS;
CLOSEUP OF SEALS NEAR BOULDER BEACH
BASKING LEDGE.

4/29/79
SUNDAY

4/26/79 -
Thursday
4/27
Friday

2
2
ASA 64
EL

2996 &
2997 03

BASKING LEDGE; "GAP";
Basking turtles; Basking boulders;
crabs; seal w/ healed wound

5/2/79
WEDNESDAY

4/27/79
FRIDAY

3
ASA 64
EL

self portraits;
algae, opihi, kupe; gap;
seals; turtles

4/27/79
Friday

4
ASA 64
EL

self portrait; turtles - seals

5/3/79
Thursday

4/27/79
Friday

5
ASA 64
EL

2 PM - 4:45 PM exploration of NW Cape - fishhook
of Necker. Photos of seals, TERN CHICK, (sooty),
landscape, Marae, blue-gray Noddies;
Brown Boobie chick; bowl cave area; "slide"

5/4/79
FRIDAY

4/28/79
SAT

6
ASA 64 EL

Crabs on turtles; baskets of the
morning; juvenile 2391 hauled out;
SA seal on black lava; Seal w/ distinctive
belly scar; Basking turtles w/ PL filter;
Marae (see text for numbers); Frigates
inflated;

5/5/79
Saturday

4/29
SUN

Seal with 5 baskets (1 w/ PL)
Seal w/ baskets - many boxes.

5/6/79

Dates	Roll	Subjects
4/29/79 SUNDAY	8 EL ASA 64	<p>Nearly whole roll of seal w/ basking turtles - many angles. Adult turtle sleeping in "keyhole" channel; SA seal "waterstreaked" on ledge with 5 PM sun; Bulwer petrel (~1/8 sec); Cluster of opihii; NW Cape (WA) from Toroger composite;</p> <p>4/30/79 Monday: Turtles and seals on ledge.</p>
5/2/79 WEDNESDAY	9 EL ASA 64	<p>(A few bad due to off ASA) photos # 20-21 two boobies w/ albatross in background; #23-24 Trig adult seal w/ line scar; #25 Basker w/ depth meter A; #26 release; ♂ mounting ♀ white BASKING; BASKER w/ HEAD BY GLASS BALL [All TRIG]; W-S: COPULATING TURTLES (TELE)</p> <p>Started at frame #18 (#1-18 already taken previously with ELW) (Kaola in brainstorm from Easy Rider)</p>
5/3/79 Thursday	10 EL ASA 64	<p>Adult Male on East w/ grossly deformed tail; BASKING TURTLES on East; NE shore of East Island; photos of Depth meters B and c; Chalky face of 2003 Blue Toy meter; me on log whale-skate by KAM; me tagging BASKER;</p>
5/4/79 FRIDAY	"	<p>" Turtle Meter c; Seal 212 with pup; Copulating Turtles ashore Trig;</p> <p>" Stopped at ~ #31 due to fear of sand particle. Rewound.</p>
5/5/79 Saturday	Roll 1BW ASA 125	<p>(photos #1-6 already taken) started at #9: Seal on Trig (late afternoon); Meter c turtle with 105mm; WA of Tern from NW, & SW;</p> <p>5/6/79 - Rest of roll of me measuring / holding juvenile 3074-W.S.</p>
5/6/79	11 EL ASA 25	<p>Me holding juvenile 3074 in boat off of W-S; Codium in mouth of 3012; Noddy Terns on Tern roosted seawall; Easy Rider & Keola at Anchor;</p>

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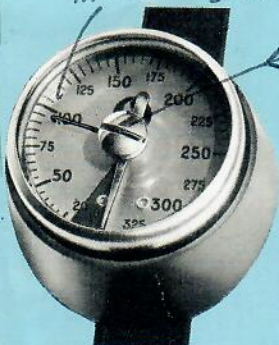


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CAPSULE DEPTH GAUGE
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Patent Pending

*screw driver
slot*



CAPILLARY DEPTH GAUGE
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METRIC SYSTEM WITH U.S. EQUIVALENTS

METRIC UNIT (1) **U.S. EQUIVALENT****WEIGHT**

milligram	mg	0.015 grains
centigram	cg	0.154 grains
decigram	dg	1.1543 grains
gram	g	0.035 ounces
decagram	Dg	0.353 ounces
hectogram	hg	3.527 ounces
kilogram	kg	2.2046 pounds
quintal		220.46 pounds
metric ton		1.1 tons

LENGTH

millimeter	mm	0.04 inches
centimeter	cm	0.39 inches
decimeter	dm	3.94 inches
meter	m	39.37 inches
decameter	Dm	32.81 feet
hectometer	hm	109.36 yards
kilometer	km	0.62 miles
myriameter		6.2 miles

VOLUME

cubic centimeter	cm ³	0.061 cubic inches
cubic decimeter	dm ³	0.0353 cubic feet
cubic meter	m ³	1.31 cubic yards
cubic decameter	Dm ³	13.10 cubic yards

METRIC UNIT (1) **U.S. EQUIVALENT****AREA**

square centimeter	cm ²	0.155 sq. inches
square meter	m ²	1.196 sq. yards
are	a	119,60 sq. yards
hectare	ha	2.47 acres
sq. kilometer	km ²	0.3861 sq. miles

CAPACITY, CUBIC

milliliter	ml	0.06 cubic inches
centiliter	cl	0.6 cubic inches
deciliter	dl	6.1 cubic inches
liter	l	61.02 cubic inches
decaliter	Da	0.35 cubic feet
hectoliter	hl	3.53 cubic feet
kiloliter		1.31 cubic yards

CAPACITY, DRY

deciliter	dl	0.18 pints
liter	l	0.908 quarts
decaliter	Da	1.14 pecks
hectoliter	h	2.84 bushels

CAPACITY, LIQUID

milliliter		0.27 fluidrams
centiliter		0.338 fluidounces
deciliter		0.21 pints
liter		1.057 quarts
decaliter		2.64 gallons



\$215c

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